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Skeptical Inquirer

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BEWARE THE MYSTERY HOUSE!

ADRIENNE HILL

Guerrilla Skepticism: Call to Action
Susan Gerbic

Taylor Swift Conspiracies
David Hahn

Vanishing Lighthouse Keepers
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[FROM THE EDITOR

Skepticism Saves the Mystery House

Beware the Mystery House! In 1886, Sarah Winchester purchased an eight-room farmhouse in San Jose, California, and quickly began the house's transformation into a 160-room Victorian mansion. After her death in 1922, the mansion came to be called the "Winchester Mystery House" by its new owners, John and Mayme Brown. Inspiration for Walt Disney's Haunted Mansion ride and Stephen King's *Rose Red* miniseries, the Mystery House is a historical landmark and popular tourist attraction.

During Sarah Winchester's lifetime, gossip swirled about her reclusive time spent inside the mysterious mansion. The rumors only grew after her death. Did she fear she would die the moment the renovations were complete? Why did some staircases and doorways lead to nowhere? Why were there thirteen bathrooms, thirteen steps on a staircase, and thirteen candles on a chandelier made for only twelve? Did a psychic convince her to build a house for the spirits of those killed by Winchester rifles? Did she hold nightly seances and lavish parties for the 1,000 ghosts said to reside there? Was this mansion the most haunted house in the world?

Even though questions such as these have been portrayed by some as unsolvable mysteries, answers can be found if you know where to look. Most notably, Joe Nickell provided many answers during his 2002 investigation for Skeptical Inquirer (September/October 2002). Building from his work, and the work of subsequent skeptical investigations, Adrienne Hill provides a fresh look into the Winchester Mystery House, and more importantly Sarah Winchester herself, in this issue's cover story. Motivated by unfair portrayals of Sarah Winchester, Hill's work turned from investigation to activism when she made substantial revisions on Wikipedia to the Winchester Mystery House and the Sarah Winchester pages.

With Winchester's legacy at stake (including even the name she used), Hill's article highlights the value of fighting for truth online. Hill is a member of Guerrilla Skepticism on Wikipedia (GSoW), and her corrections on that site withstood the resistance of someone employed by the Mystery House. The Mystery House staff would've gotten away with it too—if it weren't for these meddling skeptics. Indeed, objective reporting won the day.

Skepticism saved the Mystery House this time, but the work is far from done. Our cover story is just one example of how GSoW and its fearless leader, Susan Gerbic, work to promote accurate information online. But GSoW needs more help! They need more editors to write new pages and improve existing ones. They have specific needs for editors fluent in other languages and those who have knowledge in specific domains of science. They also need more people to upload photos to Wikimedia. Fortunately, they provide free training in all these areas. If you'd like to learn more, check out Susan Gerbic's call to action on p. 5 of this issue.

—Stephen Hupp

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Our Values: Integrity, Courage, Innovation, Empathy, Learning, and Wonder.

Join Guerrilla Skepticism on Wikipedia—and Help Us Find More Science Experts

Susan Gerbic

The Guerrilla Skepticism on Wikipedia (GSoW) project I run is often associated with writing and maintaining pages focused on paranormal, anti-vaccine, and science biographies. Although we do indeed write a lot about those topics, we also focus on pages that are just science. We are nearing our fifteenth year and have written over 2,200 articles, which have been viewed over 170 million times. That's a lot of success, but there's so much work yet to be done. I am asking for your help. Can you help me find more people to train?

I have combed the scientific skepticism world seeking new recruits, and more than 100 have volunteered their time to join my Secret Cabal as we work to keep nonsense out of Wikipedia. What we need now are opportunities to pitch GSoW to the broader science community.

I have reached out to museums, astronomy clubs, science podcasts, and more. I often either don't hear back or they hand-wave me off, explaining that no one uses Wikipedia for science education. They couldn't be more wrong! Not only are students turning to Wikipedia for information but so are journalists who in their hurry are disseminating information they take from Wikipedia (sometimes even plagiarizing it). We *know* they are using Wikipedia, so why don't we insist on giving them the best information possible?

On the science pages, we are barely scratching the surface. While some contain pseudoscience, more often they are simply neglected. I don't have enough editors who feel confident to evaluate the content on many science-related pages. During the COVID-19 lockdown, we focused on vaccines, virologists, and the people spreading related misinformation. It was an all-hands-on-deck moment, and we created 119 articles about vaccines with over eight million page views.

Susan Gerbic presenting on the Guerrilla Skepticism on Wikipedia project

Now we are stable in our new normal, and it's time to grow our base of editors.

You don't need a science degree to become a GSoW editor, but when it comes to science articles, it does take expertise to understand the difference between a *Maccullochella peeli* and a *Maccullochella macquariensis*. I don't have nearly enough editors who feel confident writing about sharks, finches, and gravitational waves. We are often out of our depth, and other than successes from a couple of science-heavy outlets (such as Kevin Folta's *Talking Biotech Podcast* and Kyle Polich's *Data Skeptic Podcast*), we've had little response from our efforts to recruit people with expertise in science.

Adrienne Hill rewrote the Winchester Mystery House and Sarah Winchester Wikipedia pages, which together have been viewed one million times since. As described in the cover story of this issue, we even kept the page edits maintained when a representative from the Mystery House attempted to revert the article to its previous paranormal-promoting pseudohistory.

Wikipedia, when written correctly, is pure science communication. It holds a place alongside science museums, public lectures, zoos, libraries, planetariums, and other existing methods of informal science education. Those other outlets only reach the audience on hand and are limited to people with geographic and financial access. Wikipedia is immediately accessible and can reach hundreds of millions. Wikipedia resides in the pocket of anyone with a smartphone and internet connection.

Do you have access to a science audience? If so, help me pitch GSoW to them. Or maybe you can join the team yourself! Science trained or not, GSoW needs you; we can't quit just because the task is massive. We are making progress, and it's time to take Wikipedia to the next level. For more information, visit https://www.abouttimeproject.org/gsow. ■

Susan Gerbic is the cofounder of Monterey County Skeptics and a self-proclaimed skeptical junkie. She is also founder of the Guerrilla Skepticism on Wikipedia (GSoW) project and a fellow of the Committee for Skeptical Inquiry.

Vatican Revises Rules for Investigating Miracles

Benjamin Radford

In May 2024, the Vatican issued updated guidelines on how the Catholic Church should investigate and adjudicate claims about miracles and other supernatural phenomena (healings, weeping statues, stigmata, etc.).

The document, *Norms for Proceeding in the Discernment of Alleged Supernatural Phenomena*, is technical and a bit tough going, but basically because God has, reportedly, chosen to work in mysterious ways—many of which are, upon close inspection, ambiguous and indistinguishable from ordinary, non-miraculous events—the Vatican is forced to acknowledge what skeptics have noted for millennia: not all (in fact arguably none) of the events widely believed to be supernatural actually are.

In other words, if God's miracles were irrefutable, self-evident, and obvious (such as popes living to be 200, prayer restoring lost limbs, or Vatican City displaying a levitating statue of the Virgin Mary that defies scientific explanation), then there would be little need to have extensive guidelines for investigation because ruling out alternative explanations (i.e., the core purpose of investigation) would be a fairly straightforward matter.

In the past, after news of an alleged supernatural event got out—usually, of course, exaggerated and sensationalized in the process—bishops would be pressured (by press, parishioners, and the public) to make a determination without due investigation. The document notes:

> The Dicastery, even in recent times, were still inclined toward the Bishop making a declaration that the event was "supernatural" or "not supernatural"—so much so that some Bishops insisted on being able to make a positive declaration of this type. Even recently, some Bishops have wanted to make statements such as, "I confirm the absolute truth of the facts" and "the faithful must undoubtedly consider as true …". These expressions effectively oriented the faithful to think they had to believe in these phenomena, which sometimes were valued more than the Gospel itself.

As someone who's investigated numerous supernatural claims, including miracles, I can confirm that the process can take days, weeks, or even months—and because of the ever-shortening news cycle, people may barely remember or care about the initial claim by the time a mystery has been solved. This leads to the common situation where sensational headlines go viral, while eventual debunking follow-ups get little or no attention.

Perhaps most interesting from an investigative skepticism point of view are an elucidation of both positive and negative criteria for formally establishing supernatural phenomenon. Positive criterion include:

> The credibility and good reputation of the persons who claim to be recipients of supernatural events or to be directly involved in them, as well as the reputation of the witnesses who have been heard …; the doctrinal orthodoxy of the phenomenon and any messages related to it; [and] the unpredictable nature of the phenomenon, by which it is evident that it is not the result of the initiative of the people involved.

As to the negative criteria, they include:

> The possibility of a manifest error about the event; potential doctrinal errors …; a sectarian spirit that breeds division in the Church; an overt pursuit of profit, power, fame, social recognition, or other personal interest closely linked to the event; gravely immoral actions …; psychological alterations or psychopathic tendencies in the person that may have exerted an influence on the alleged supernatural event; and, any psychosis, collective hysteria, and other elements traceable to a pathological context.

Under the new guidelines, the bishop, while still conducting investigations, is not to make public statements without authorization. While the public often wants binary, cut-and-dried answers to mysteries ("Is it a miracle/ghost/Bigfoot—or isn't it?"), in real-life paranormal investigation, the conclusion is sometimes nuanced and provisional. For example, if I'm asked of the famous 1977 photograph of the Champ Lake monster "Is it real?" I have no simple, accurate, and concise response: Yes, the photo is real. No, it's not a hoax. But no, it's not a lake monster.

The Vatican, recognizing this thorny issue, offers six different possible outcomes from an investigation, ranging from declaring an authentic miracle to a flat-out debunking. This, conveniently, offers opportunities for the Vatican's miracle investigators to suggest a miracle happened while neither fully confirming nor dismissing it. At Sharon Hill's informative website (sharonahill.com), she notes wryly of one of the categories, "Notably, the *nihil obstat* gives the religious officials a way off the hook by stating: We're not going to declare it's supernatural but, just saying, sometimes the Holy Spirit can work in supernatural ways. Maybe this is one of those times, but we can't quite decide."

Of particular note—and long overdue given the extensive history of pious fraud and the high potential for exploitation when believers are presented with purported and personal supernatural or miraculous signs—is the explicit condemnation of "the use of purported supernatural experiences or recognized mystical elements as a means of or a pretext for exerting control over people or carrying out abuses."■

Benjamin Radford is author of over a dozen books, including *Scientific Paranormal Investigation: How to Solve Unexplained Mysteries*.

News Bites: From a Psychic Scam Sentence to the ScienceSaves Winners

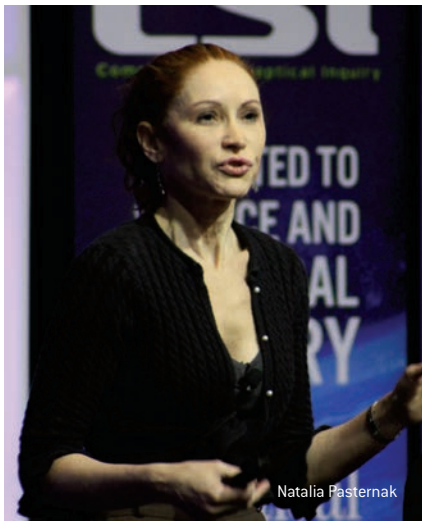
Stephen Hupp, Julia Lavarnway, and William M. London

Operator of 'Psychic' Mailing Scam Sentenced. On April 15, 2024, Patrice Runner, a Canadian and French citizen, was sentenced to ten years in federal prison for directing a mass-mailing fraud scheme from 1994 through 2014 that stole more than $175 million from over 1.3 million U.S. victims. Runner, along with four coconspirators who previously pleaded guilty, bombarded consumers with letters falsely purporting to be from well-known French "psychics" Maria Duval or Patrick Guerin and promising the opportunity to achieve great wealth and happiness—for a fee. Runner's scheme was part of a massive, complex business network operating around the world. The scam was described in the book *A Deal with the Devil: The Dark and Twisted True Story of One of the Biggest Cons in History* for which its authors, *CNN Money* investigative reporters Blake Ellis and Melanie Hicken, were awarded the 2018 Robert P. Balles Annual Prize in Critical Thinking by the Committee for Skeptical Inquiry. The book received favorable reviews in Skeptical Inquirer by both Wendy M. Grossman (November/December 2018) and Terence Hines (January/February 2020). (For more, see Consumer Health Digest newsletter at quackwatch.org/ncahf/digest24/24-25/.)

The Royal Society Elects Michael Mann as Fellow. On May 16, 2024, the U.K.'s elite national academy of sciences, The Royal Society, announced that Michael Mann joined the exclusive group as a Foreign Member in a class of fewer than 100 researchers. The Royal Society consists of roughly 1,800 living fellows worldwide. Mann, who is also a fellow of the Committee for Skeptical Inquiry (CSI) and a Presidential Distinguished Professor in the Department of Earth and Environmental Science at the University of Pennsylvania, came to national attention in the late 1990s when his research on climate change produced the Hockey Stick graph depicting the past 1,000 years of temperature change. The graph showed that earth's temperatures increased dramatically, corresponding with human-caused increases in emissions. Mann will also be speaking at CSICon 2024. (For more, read "Outstanding Scientists Elected as Fellows of the Royal Society" at royalsociety.org.)

Natalia Pasternak Gives Keynote at London Gala. On May 21, 2024, CSI Fellow Natalia Pasternak wrote about her experience as the keynote for the Science Museum Group Annual Dinner in London. "What scientists don't know can be frightening to the public," said Pasternak, "and when scientists change their mind as a result of new evidence, it can be even scarier. As scientists, we are used to changing our minds, and making mistakes, and failing again and again in experiments. The public isn't. After all, they get the results, and not the process, so they often don't know how much change, failure and repetition is involved in scientific research. So, we must show them. But we must be careful in clarifying that recognizing our past mistakes doesn't automatically render everything useless." Pasternak was chosen as the keynote speaker in recognition of her science communication and policy work. She'll also be presenting at CSICon 2024. (For more, read "The Keynote Speaker at the Science Museum Group's 2024 Annual Dinner, Brazilian Science Writer and Communicator Natalia Pasternak, Reflects on Museums, Science and Critical Thinking" at blog.

Michael Mann


Natalia Pasternak

Stuart Vyse. Credit: Karl Withakay

sciencemuseumgroup.org.uk.)

Stuart Vyse Wins Science Communication Award. On May 23, 2024, CSI Fellow Stuart Vyse was recognized with an award titled Effective Presentation of Behavior Analysis in the Mass Media by the Society for the Advancement of Behavior Analysis (SABA). Among his many forms of science communication, Vyse's work as contributing editor for Skeptical Inquirer was cited during the introduction provided by Ruth Anne Rehfeldt, president of SABA. Vyse's presentation, titled "The Happy Accidents of a Writer's Life," included appreciation for all the editors who have shaped his writing. "Early in my career, I learned a lot by having my work ripped apart by good editors," said Vyse, "and even today my editors save me from making horrible mistakes … so thank you to all you editors out there, wherever you are." (For more, visit stuartvyse.com.)

Surgeon General Releases Advisory on Social Media Use by Youth. On May 23, 2024, the U.S. surgeon general, Dr. Vivek Murthy, issued an advisory about the role of social media use on the mental health of children and adolescents. In a press release, Mitch Prinstein, the chief science officer of the American Psychological Association (APA) supported the action by saying, "Research has shown that young people are especially vulnerable to *specific content and functions* on social platforms that interact with neural and psychological vulnerabilities in adolescence" (emphasis added). Prinstein later used social media (i.e., X), to make a clarification: "Let's clear up the debate: OLD studies asked whether social media screen time minutes predict poor mental health. They don't. BUT recent studies show that specific features and content DO predict negative outcomes as detailed in @APA's latest report." (For more, see "Potential Risks of Content, Features, and Functions: The Science of How Social Media Affects Youth" at apa.org and "Surgeon General Issues New Advisory About Effects Social Media Use Has on Youth Mental Health" at hhs.gov.)

ScienceSaves Announces Video Scholarship Contest Winners. On May 29, 2024, the Center for Inquiry (CFI) announced winners of the Video Scholarship Contest by its educational program ScienceSaves. College-bound seniors were urged to submit a brief video answering the question "What has science done for me?" or "What has science done for somebody I know?" The response to this year's contest was the best yet—over 400 young people submitted outstanding videos. Topics ranged from "driving to school in the mornings to battling (and beating) skin cancer." The top-prize $10,000 winner was Isabelle Haeft for her video about how a transcatheter aortic valve replacement saved the life of her grandfather. (For more, read "ScienceSaves Announces Winners of Its 2024 Video Scholarship Contest" at centerforinquiry.org.) ■

Stephen Hupp is editor of Skeptical Inquirer.

Julia Lavarnway is managing editor of Skeptical Inquirer.

William M. London is editor of the *Consumer Health Digest* electronic newsletter at the Center for Inquiry's Quackwatch.

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In Memory of CSI Fellow Frederick Crews

The Crews Family

Frederick Crews was an admired professor of literature and the author of fourteen books, some of which drew wide interest for their satirical or argumentative import. He died peacefully on June 21, 2024, at age ninety-one after a brief illness.

Crews was the son of Ruby Gaudet Crews and Maurice Augustus Crews. He was educated at Germantown Academy, where he was valedictorian and cocaptain of the tennis team. At Yale, he won six academic prizes and graduated summa cum laude in 1955. His prizewinning senior thesis on Henry James was published as a book in 1957.

Crews acquired a Princeton PhD in English in a record three years and then permanently moved to California, where he served on the UC Berkeley faculty from 1958 until his retirement, as chair of the English department, in 1994. In 1959, he married Elizabeth (Betty) Peterson, with whom he had two daughters, and who became a successful photographer for child development textbooks.

Crews began his academic career in a conventional way, publishing a monograph on the novelist E.M. Forster in 1962. In 1963, however, he surprised the world with a bestselling satire on literary criticism, *The Pooh Perplex*, which remains in print today. Many years later, in 2001, it would find a successor in the mordant *Postmodern Pooh*. Both books employed parody to lampoon fashionable trends in academic discourse.

In the mid-1960s, Crews became an outspoken activist against the American war in Vietnam. In the same period, his intellectual interests focused on Freudian psychoanalysis, which he adapted to literary explanation in an influential study of Nathaniel Hawthorne in 1966. Soon, however, Crews developed doubts about the cogency of Freudian doctrine, and in 1980 he began to publish critiques of what he now regarded as pseudoscience. One result was *Skeptical Engagements* (1986) and another was a 1993 article in *The New York Review of Books* titled "The Unknown Freud." That piece and a later denunciation of "recovered memory" psychotherapy elicited more controversy than any others in the history of the magazine. The whole affair, with protesting letters and Crews's ripostes, became *The Memory Wars* (1995). In 2017, Crews would publish the lengthy biographical study *Freud: The Making of an Illusion*, the aim of which was to trace the steps by which the founder of psychoanalysis gradually abandoned the empirical ethos. Writing in *The New Yorker*, Louis Menand characterized the book as having driven a stake "into its subject's cold, cold heart."

Crews's other works include *The Critics Bear It Away: American Fiction and the Academy* (1992), which won a PEN award, and *Follies of the Wise: Dissenting Essays* (2006). Each of those books was a finalist for a National Book Critics Circle award. Both contained essays originally published in *The New York Review of Books*, for which Crews remained a contributor from 1964 to 2017. There he wrote critically on topics as varied as creationism, theosophy, the UFO cult, Big Pharma, and the Rorschach test.

As a teacher, Crews had a keen interest in standards of clarity in exposition. One product of that interest was a leading composition manual, *The Random House Handbook* (1974), which went through six editions and reached over a million readers. In Crews's view, the handbook fit with all his other publications since 1980, both polemical and humorous: all were aimed at puncturing pretense and advancing the cause of rational, evidentially grounded discourse.

At Berkeley, Crews won a Distinguished Teaching Award, a Faculty Research Lectureship, and the Berkeley Citation, and he was named a Berkeley Fellow. He was also a Fulbright Scholar, received a Guggenheim fellowship, was elected to membership in the American Academy of Arts and Sciences, and became a fellow of the Committee for Skeptical Inquiry. But from 2018, he devoted himself to one cause: arguing for the innocence of Jerry Sandusky. In Crews's view, Sandusky had been railroaded into prison through a combination of misplaced suspicion, pernicious "recovered memory" theory, and egregious prosecutorial misconduct.

Crews was an outdoorsman. He continued to run in local road races until age seventy-two, and he remained a skier, swimmer, bodysurfer, motorcyclist, and mountain hiker into his mid-eighties.

He is survived by Elizabeth (Betty) Crews, his wife of almost sixty-five years; his children, Gretchen Detre and Ingrid Crews; his grandchildren, Alejandro and Rebeca Márquez and Isabel and Aaron Detre; his great-granddaughter, Yael Medrano Márquez; his sister, Frances James; and his nieces, Sigrid Bonner, Helen James, and Avis James. Long ago, he chose the sardonic text for his tombstone: "But I thought I had tenure!" ■

COMMENTARY]

Trauma Here, Trauma There, Trauma, Trauma Everywhere!

PETER BARGLOW

The English word *trauma* originates from the ancient Greek word *Tpau'ua*, referring to the appearance of physical wounds that show twisting, bruising, piercing distortions. It became embedded in the English language in the late seventeenth century, and during the late 1880s, its meaning was extended by Jean-Martin Charcot (1825–1893) and Sigmund Freud (1856–1939) to refer to psychological wounds.

In the first edition of the American Psychiatric Association's *Diagnostic and Statistical Manual Mental Disorders*, published in 1952, *emotional trauma* was completely absent. Andrew Scull (2023), who has studied trauma as a kind of "fashion," has detailed the long process through which it became so important to American psychiatry. Chaim Shatan (1972) of New York University invented the term *post-Vietnam syndrome* to refer to delayed appearance of distressing emotional symptoms in soldiers who had fought there. Robert Lifton of Harvard insisted that the symptoms of psychological damage afflicting soldiers could emerge many years later after such an injury. Their advocacy produced the inclusion of posttraumatic stress disorder (PTSD) by the APA as a diagnostic category in 1980, which has kept increasing in importance through to the present day. This disorder is characterized by symptoms such as involuntary recurrent distressing memories, hypervigilance, emotional numbing, rage attacks, and violent behaviors. During past decades,

the genesis of trauma's multiple symptoms has been attributed to all sorts of major and minor psychological wounds. Despite the alleged etiological origins in biology and neurology, pharmacological treatments have had a high failure rate (Hoskins 2015).

Particular attention during recent years has been devoted to soldiers and war victims, leading to dozens of published books. The 2014 *New York Times* bestseller *The Body Keeps the Score* by Bessel A. van der Kolk has sold 300 million copies throughout the Western world. Rape and violence survivors constitute another current large clinical population. Judith Herman's comprehensive book *Truth and Repair* (2023) is an important book emphasizing emotional trauma for women. Trauma treatment expenses in the United States alone approach $10 billion per year.

Let's look into *The Body Keeps the Score* as a prime example of the literature on trauma. It is not surprising the book, full of allusions to English and world literature and packed with imaginative cures for all varieties of trauma and referring to impressive neurobiology findings, has been widely read. It contains an astonishingly large number of pertinent and valuable citations—twenty-five of which refer to van der Kolk's own original research.

But many flaws and unsupported guesswork weaken the value of the book. Readers of this now-famous nonfiction work, which is experiencing a resurgence in popularity, need to be wary of its assertions, conclusions, and recommendations. As a skeptical psychiatrist, I will attempt to highlight the many errors and weaknesses of the book's many unsupported allegations. Before I confront some of the more substantial claims in *The Body Keeps the Score*, let me first present a sampling of the book's claims related to the many approaches and remedies for the painful consequences of trauma.

Traditional Freudian reliving of traumatic events is generally considered a therapeutic failure, but traditional psychoanalytic approaches pioneered by Freud, Breuer, Janet, and Charcot are described as useful. Prozac and similar SSRI agents are considered effective while antipsychotic drugs are considered questionable. Van der Kolk is skeptical about the worth of benzodiazepines but values highly the use of MDMA (ecstasy). Neurofeedback and acupuncture are described as effective. He claims behavioral desensitization to traumatic memories may be helpful and considers somatic therapies quite valuable. Breathing, calming practices, mindfulness, hypnosis, caring for animals, rhythmic chanting and dancing, and being touched and hugged are all described in the book as being beneficial. Van der Kolk also claims that acting and live theater activities assist the treatment of a vast array of earlier traumatic experiences. Overall, the author's recommendations represent a mix of supported and unsupported claims. Now that you have a sense of the broad range of claims in the book, I will focus in more detail on two claimed treatments for trauma in the book: EMDR and yoga.

Chapter 15 of *The Body Keeps the Score* ("Letting Go of the Past: EMDR") includes the case history of "David" and the treatment approach called eye movement desensitization reprocessing (EMDR). David had a long history of drug addiction, which illustrates the imprecision of the PTSD diagnosis. "Maggie" is another case history involving drug addiction. In another one of the book's case studies, "Kathy" indicates that "The process freed something in her mind/brain to activate new images, feelings and thoughts" (261). What that "something" is (or was) remains a mystery. All these single case studies suffer from the same problem. If data are derived from changes in personality traits of a single human being, then extensive use of that record of change requires initial skepticism. There is much more strength in data that have been obtained from hundreds of human participants or more.

Van der Kolk calls EMDR a "scientific advance" (253), a claim that remains unsupported today. Yes, many of its findings have been reproduced in public experiments, but most of these contain faulty research methods. Its inventor, Francine Shapiro, author of the 2004 book *EMDR: The Breakthrough Eye Movement Therapy for Overcoming Anxiety, Stress, and Trauma*, did not expose her method to adequate experimentation. She did not utilize well-designed randomized controlled trials. Likewise, van der Kolk used only eighty-eight volunteers in his study comparing brief EMDR, Prozac, and placebo (van der Kolk et al. 2007). No treatment produced complete symptom remission, and Prozac was about as successful a treatment as EMDR. Using his understanding of the brain, van der Kolk stated, "On their scans we could see a sharp increase in prefrontal lobe activation after treatment as well as much more activity in the anterior cingulate and the basal ganglia" (256). This finding neither was reproduced nor allows for any cause-and-effect explanation.

Considerable research published over a decade ago casts further doubt on EMDR's beneficial findings and its incredible array of effectiveness explanations. "Fixed eye movement conditions in which subjects fix their eyes forward made no difference in treatment outcomes" (Arkowitz and Lilienfeld 2012). (For a more detailed critique of EMDR, see Gerald Rosen and Loren Pankratz's article in this issue, "Eye Movement Therapies, Purple Hats, and the Sagan Standard," on p. 54)

Chapter 16 ("Learning to Inhabit Your Body: Yoga") opens with a beautiful quotation from Stephen Cope's 1999 book *Yoga and the Quest for the True Self*. The quote refers to a "visceral reconnection with the needs of our bodies" that supposedly fosters "a capacity to love the self." This idea originated in his widely read book about yoga. Cope was known as an esoteric yoga teacher who lacked any scientific credentials. A case history of "Annie," who had been abused by her parents as a child, opens the chapter. Annie engaged in self-cutting and repeatedly entered psychiatric hospitals. Van der Kolk treated her by using focused breathing and acupressure as part of the emotional freedom technique (EFT), an approach that lacks a reference in the book. Supposedly, her amygdala neurological structure needed "rewiring." EFT suffers

from many of the same research weaknesses as EMDR.

Van der Kolk admits that half of traumatized patients use drugs or alcohol to numb themselves, but the book tends to ignore addiction treatments. A likely incorrect statement follows: "lack of coherence between breathing and heart rate makes persons vulnerable" to heart disease, cancer, and depression. People with PTSD are said to have unusually low heart rate variability (HRV), and van der Kolk states that "their sympathetic and parasympathetic nervous systems are out of sync" (269). The cited reference to James W. Hopper et al. (2006) and Herman's *Truth and Repair* (2023) begins with two words of caution, "Preliminary Evidence," but allusions to this work then occupies several more pages. Surprising is the author's odd statement that while Google lists 17,000 yoga sites claiming that the practice improves HRV, he could find no supporting studies. Nevertheless, van der Kolk became a teacher at a yoga center while claiming that his own HRV had improved. Such a truth claim resembles a sophisticated advertisement.

The chapter also mentions, without a supporting citation, that in van der Kolk's study of six women during twenty weeks of yoga practice, there was "increased activation of the basic self-system, the insula and the medial prefrontal cortex." However, his claim lacks a plausible cause-effect explanation or even a proposal for a likely mechanism of action. The chapter ends optimistically with Annie and her husband happily "cuddled together in bed." Love reigns supreme, and beneficiaries of odd treatments hardly need worry about proof of effectiveness.

The Body Keeps the Score, while eloquently written, is scientifically weak, misleading, flawed, and at times deceptive. It relies on fascinating clinical anecdotes and references to the finest literature of the western world. Also, it exploits a spurious connection to contemporary neuroscience. It is a prime example of dubious scientific literature. ■

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Peter Barglow, MD, has been a professor of psychiatry at Northwestern and UC Davis Medical Schools. At Davis, he was chief of addiction medicine. He is the author of numerous scientific articles.

Critical Thinking Conference in Argentina

STEPHEN HUPP

Credit: Pamela Borgo Cosentino

On May 18–19, 2024, I attended the Critical Thinking Conference held by the Argentina branch of the Center for Inquiry. Its executive director, Alejandro Borgo, organized the event, billed as "an antidote to current scams," and welcomed me to Buenos Aires. Held in the historic Argentine Scientific Society building, presenters came from across South America and the United States to discuss science, pseudoscience, and magical thinking.

On the first day, I presented a revised version of my CSICon 2023 talk, "Exploring Pseudoscience in Pop Psychology." I especially enjoyed revealing the secrets hidden in Borgo's Skeptical Inquirer piece—"Guidance from a Numerologist: Argentina's National Bank"—from the January/February 2024 issue of Skeptical Inquirer. For example, the piece appeared on page seven, coinciding with the same key number offered by the numerologist in the news story (see the Secrets Revealed section in the March/April 2024 issue for more related secrets). My presentation provided a mythical journey across the human lifespan, covering topics such as the myth that a baby is more likely to be born during a full moon.

My translator for the event, Dan Barker, leads the U.S.-based Freedom From Religion Foundation. During his own presentation, Barker summarized his forthcoming book, *Contraduction*, a rebuttal to intelligent design theories. His title represents an "inversion of order" leading to poor reasoning. In the book, his first contraduction example is the hypothetical assumption that someone must have purposely directed a river to flow along a state line (inversed from choosing a state line based on an existing river). In his book, he applies this inversion-of-order idea to religion; as a former preacher, his arguments are empathetic to those who believe.

Earlier, the day opened with Dr. Marcos Telias of Chile, covering topics such as homeopathy, reiki, therapeutic touch, and healing touch. He used systematic reviews from the Cochrane Database (which helps detect and prevent bias in published studies) to counter misinformation. In a conversation after our presentations, he also shared a myth related to one of the myths I discussed. Some Spanish speakers believe pregnant women should avoid going outside during an eclipse because their babies will be born with moles. The word *mole* in Spanish is *lunar*, and so this loose connection provides a good example of the logical fallacy called reasoning by representativeness.

Other presenters on the first day (all from Argentina), included Fernando Lefevre on UFOlogy, Celso Aldao on flat-earth theories, and Dr. Diego Sarasola on cannabis. Victor Garcia Belaunde, a Peruvian psychologist, also gave a presentation titled "What Are Pseudosciences and How Do They Affect Us?" Opening with topics such as the Loch Ness monster and extraterres-

trials in Mexico, Belaunde highlighted the differences between science and pseudoscience and emphasized the ways that pseudoscience harms society.

The second day included two talks on artificial intelligence (AI), a topic fresh on my mind, and probably yours, because of Guy Harrison's cover story for SI's May/June 2024 issue. First, from Argentina's National Council for Scientific and Technical Research, Gustavo Romero's presentation, "Myths and Realities," distinguished the human brain from a computer while also cautioning that "AI is not morally responsible for its actions."Then, Dr. Ernesto Gil Deza, an Argentine oncologist, presented "Artificial Intelligence and Magical Thinking in Medicine." He warned that AI has the potential to cause overdiagnosis, overtreatment, and overly high medical expenses.

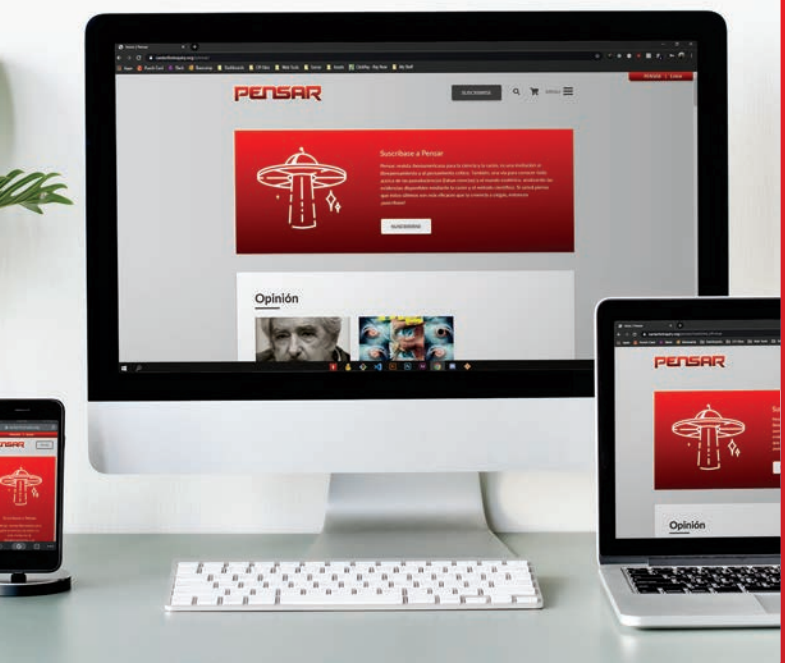
In the afternoon, Argentine astronomer Sofía Martínez presented "Space Exploration and Conspiracy Theories" and tackled false beliefs about the moon landing. She addressed the reasons conspiracy theories are attractive; for example, they offer people feelings of control and identity. She then turned to the value of an accurate understanding of space exploration and provided tips for talking to people who believe in conspiracies: ask questions, keep an open mind, and avoid arguments from authority.

Other afternoon entertainment included "Everything I Know about Science I Learned from *The Simpsons*" by Claudio Sánchez, an Argentine engineer and author of a Spanish-language book of the same name (it's also a TEDx Talk). Having previously read *The Simpsons and Their Mathematical Secrets* by Simon Singh, I delighted in this opportunity to explore many of the scientific secrets hidden in one of my favorite shows.

Serving as emcee for the event, Borgo's presence was felt throughout the weekend. I've been fortunate to get to know him via email in my role as SI editor, but it was a real treat to spend time together in Buenos Aires. Borgo has been diligently promoting critical thinking for many decades in South America. Most notably for me, he's editor of *Pensar*, the Spanish-language magazine for science and reason you often see promoted in SI. Per my request, he signed a copy from the first volume, and he also signed a copy of his Spanish-language book *Why Me? The Most Common Mistakes We Make When Thinking* with a prologue by Mario Bunge. Borgo's presentation, "Cultural Threats and Expectations for the 21st Century," was a hearty defense of free expression. The talk highlighted for me the fact that even skeptical thinkers can disagree with each other, but we must be able to disagree in respectful ways that find common ground and rely on critical thinking. These types of disagreements have been playing out in the largest skeptical organization in Germany (see recent articles by Johannes Zeller at skepticalinquirer.org).

Overall, the conference was a great success in bringing together many science communicators from several countries. It would have been even better with a larger turnout and more female speakers, but these challenges are common to many skeptical groups. It's reassuring to know that the Argentine branch of CFI, led by Borgo, is promoting critical thinking throughout South America and in Spanish-speaking countries across the globe. The work of most of the conference speakers will live on through *Pensar* magazine online (pensar.org), where articles can be viewed in both Spanish and English. ■

Stephen Hupp is editor of Skeptical Inquirer.



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How and Why I Got Involved in Scientific Research and Skepticism

ALEJANDRO BORGO

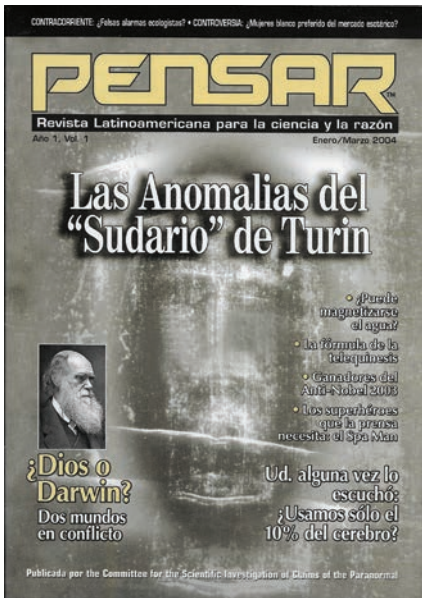
When I was a child, my father used to give me huge popular science books on various subjects. The one I liked the most was an illustrated book on astronomy. That book fascinated me, and I began to observe the sky.

When I was a teenager, my parents and I moved to a friend's house with a huge library. There I found two books: one was about a parapsychology congress held in the 1960s, and the other was *Parapsychology* by Robert Amadou. The possibility of being able to develop telepathy, clairvoyance, precognition, and psychokinesis fascinated me. One thing led to another, and I decided to take a course in parapsychology.

At the Argentine Institute of Parapsychology (hereafter referred to as the Institute), they gave a course that began in March 1979. I immediately signed up. I remember that at the end of the course, they asked us to write an essay on parapsychological phenomena. My writing, although naive, allowed a hint of doubt to filter through. If telepathy existed and other parapsychological phenomena could be developed, why would we need telephones, faxes, and other means of communication?

I began to frequent the Institute, where I was exposed to the *Journal of the Society for Psychical Research* (from the United Kingdom) and the *Journal of the American Society for Psychical Research* (from the United States).

Together with my colleague Daniel R. De Cinti (1954–2020), I tried to reproduce the experiments that we saw published in various magazines and books. I remember corresponding with


PENSAR
Revista Latinoamericana para la ciencia y la razón
Las Anomalias del "Sudario" de Turin
¿Dios o Darwin?
Dos mundos en conflicto
Ud. alguna vez lo escuchó: ¿Usamos sólo el 10% del cerebro?

First issue of *Pensar* magazine, released in January 2004.

John Beloff, who had said, "It seems that ESP exists only in the United States."

Experiments

We started in 1979, trying to reproduce the experiments that Joseph B. Rhine showed in his books. But we did not find positive or repeatable results. Later, we carried out the experiments with Carl Sargent's Ganzfeld method. No positive results in sight. I must say that the methodology included very strict protocols, and we had to perform some difficult tasks. But we did. And the result was negative.

One day, a man named José Maria Herrou Aragon showed up at the Institute. He was a very well-dressed gentleman who seemed serious and formal. I asked him the reason for his visit, and he replied, "I am capable of arousing women from a distance." He claimed to have developed a method called "sexual remote control." We, like James Randi, didn't give anything away. He was subjected to objective tests, but he was unable to achieve his goal (for more on this test, see Borgo 2024). Even though he couldn't live up to his claims, soon thereafter he published a book on the subject in question, *Telecomando Sexual, Ataque Psíquico Y Otras Técnicas Parapsicológicas*, and he also appeared on television.

Two Horrible Stories

Argentina had experienced one of the most brutal dictatorial regimes of its history from 1976 to 1983, an era known as Guerra Sucia ("the Dirty War"). It was not a war against foreign enemies but mostly on anyone known or suspected to be critical of the government. During this time, the military rounded up many innocent people whose only crimes were being journalists or "subversives." Some were tortured; others were killed. On many occasions, the military snatched dozens of people off the street or from their homes, bound or drugged them, then flew over the Atlantic Ocean at night to push them out of the plane into the freezing darkness. All died from the impact or drowning. To this day, thousands of people remain unaccounted for or "disappeared." During this era of terror and violence, I was working at the Institute. I remember two episodes that brought into sharp focus the dangers of the paranormal (Borgo 2002).

First, I remember that in 1980, at

the height of the military dictatorship that caused thousands of deaths in Argentina, a young man came to consult with me. He wanted to know if through parapsychology we could find out where his missing brother was. I told him no, that unfortunately parapsychology couldn't do anything about his case. And I recommended that he not go to any psychic or parapsychologist because he would waste money and increase his frustration.

Second, a few years later, there was a seer who regularly visited the Institute. She confided in us that during the military dictatorship there were paramilitary groups that brought her a large piece of cardboard with photos of people, and they forced her to say who was a terrorist. She had no chance to refuse the order. Imagine the despair that this caused us: dozens of people murdered by the "intuition" of a seer, which she could not deny.

She was supposed to pick out one or two of them. She had no choice but to cooperate; her own life was threatened if she didn't help. Even if she knew she had no powers, she couldn't admit it. The group then went out to do their "job"—kidnap, torture, and perhaps murder. Her random choice could have picked anyone. Anyone could die. And it was all based on the madness of a pseudoscientific belief. Like during the witch trials, those who abandon rationality for superstitious thinking are a danger to us all. When magical thinking mixes with paranoia and fear, no one is safe.

Those two episodes marked me forever. A "parapsychologist" could give false hope and could also betray innocent people.

Inner Process

While these things were happening, I became convinced that parapsychological phenomena were not proven—and, most importantly, their supposed existence could lead to death.

Now, what was the positive? These experiences led me to learn statistics, the scientific method, probabilities, research design, and a responsible attitude toward people's demands. And I did that when I was in a parapsychology institute!

Until 1987, we conducted experiments, and I became a kind of expert in designing, evaluating, and carrying out a large number of experiments: Zener cards, reproduction of drawings, the meaning of dreams, the Ganzfeld method, and the famous random event generator by H. Schmidt, who had kindly sent it from Germany. We even had an electroencephalograph and a psychiatrist to help us interpret the output.

I remember we had a computer, the Commodore 64, with just 64 bits of memory. With it, we designed a small program that made random dots appear on the screen. I divided the screen into four square parts with an adhesive tape. The subjects had to indicate in which quadrant the next point would appear.

My point is that you can learn science and the scientific method by investigating so-called paranormal phenomena.

The Next Step

After about three years, together with colleagues who were medical doctors, psychologists, and illusionists, we decided to create the Argentine Center for Investigation and Refutation of Pseudoscience, having already been in contact with CSICOP. Due to the great publicity that astrologers, mentalists, and fortune tellers received in the media, we launched ourselves into the arduous task of putting some rationality in the face of so much nonsense.

We published a magazine called *El Ojo Escéptico* (*The Skeptical Eye*; see http://www.elojoesceptico.com.ar), and we had a very warm reception. Teachers wrote to us from all over the country asking us about UFOs, astrology, alternative medicine, and other topics related to pseudoscience. From that moment on, those practicing pseudoscience knew they would have to deal with skeptics who questioned their claims. Our radio and television appearances were a success; many programs called us. We did it—we persevered and were able to educate the public about tricks and deception.

The Present

Now I am proud to be a fellow of the Committee for Skeptical Inquiry, write for Skeptical Inquirer, and represent the Center for Inquiry in Argentina. And, of course, I edit *Pensar* magazine.

Let's not stay still. Pseudoscience advances and mutates through different channels; social networks are the platform on which all pseudoscience is poured with a lot of money and resources. Let's keep an eye on this. I invite you to subscribe to *Pensar*, the Ibero-American magazine for science and reason. ■

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[INVESTIGATIVE FILES JOE NICKELL

Joe Nickell, PhD, used his background as a magician and Pinkerton detective to investigate all manner of paranormal claims, including haunted lighthouses. He and his late wife Diana Harris twice served as "assistant lighthouse keepers"—which he says helped prepare him for studying the lighthouse central to this case.

The Vanishing Lighthouse Keepers

This mystery story, involving a lighthouse on one of a group of remote islands called the Flannan Isles, began in December 1900. The island is called Eilean Mor, meaning "big island," and is indeed the largest of the group that lie off Scotland's northwest coast. The island was uninhabited except for a bit of wildlife and the three lighthouse keepers who worked shifts there. (The superstitious maintain that there are also resident spirits and "little folk" who haunt the nights there; for more on haunted lighthouses, see Nickell 2012.)

The Eilean Mor lighthouse on the Flannan Isles (credit: JJM - Wikipedia)

Lighthouse Strangely Extinguished

As it happened, on December 15, 1900, the lighthouse's beam, reflected on the rough sea, was reported by the passing steamer *Archtor* to have gone out. This caused much consternation, but it was not until December 26 that conditions abated sufficiently to allow the lighthouse's relief steamboat *Hesperus* to travel there to investigate.

There was still some difficulty in landing even though the lighthouse had been provided with two landing stages, one to the east and the other to the west, so there would always be one sheltered from a prevailing wind. Upon arrival, the inquirers noted that there was considerable damage to the westward stage's jetty (or wharf). Was this a clue? As the *Hesperus* arrived, its captain sent up a flare, but it provoked no response.

On board was a man named Joseph Moore, himself a relief lighthouse keeper, who was going to visit the site to see what the situation was. He was so apprehensive he had declined breakfast. He rowed to the jetty in the small boat. However, there was no sign of life and no response to his shouts at the gate, so he hurried on up the steep path only to find the lighthouse empty. In the main residence room, the clock had stopped, and the fireplace ashes were cold. Moore waited there until two seamen who came with him in the rowboat had caught up; he was visibly afraid of what might await as they climbed the 160 steps up the tower to the lantern room to have a further look around (Davidson 2022).

They found everything tidy, top to bottom. Official investigators from the Northern Lighthouse Board would arrive a few days later and attempt to learn what had happened. Mostly, the mystery simply deepened.

Vanishment Clues

The three missing men were Chief Keeper James Ducat, Donald MacArthur, and Thomas Marshall. Of the three oilskin coats the trio would wear outside in bad weather, two were missing. The third, the one worn by McArthur, was still hanging in the tower, an indication that he had been on duty in the lighthouse when the other two, Ducat and Marshall, had gone outside, presumably because of the storm, to do something important (Wilson and Wilson 2000, 128–129).

In the small dining area, there was half-eaten food on the table and a chair had been knocked over—as if someone had rushed outside to see about something. Presumably the coatless McArthur had remained in the lighthouse as required.

Ducat, as the chief keeper, had kept a log. The last entry was for the day the light had gone off: Saturday, December 15, at 9:00 a.m. That had not occurred for lack of oil: the wicks were

The coast of Eilean Mor on the Flannan Isles

found trimmed and ready for lighting. Indeed, everything was in proper order. That meant the keepers had completed their regular duties for that day before some unforeseen tragedy had struck. However, an earlier entry, for December 12, had reported winds so severe they were unlike any they had seen before. Also, Ducat had recorded that one man was "crying," although the entry did not elaborate. Because all three men were experienced, one would not expect any of them to have been so afraid.[1]

Moreover, a log entry for December 13 stated that a storm was raging, although that was apparently contradicted by area weather records and the fact that people on nearby Lewis Isle could see Eilean Mor and saw no such alleged weather. Furthermore, the log stated that the trio were praying for the storm to abate. Some researchers have questioned the genuineness of the entries, suspecting they were added later (*Lost* 2023, 109–110). In any event, what had happened to the three missing men?

Theories

Over the years, various hypotheses have been offered, with varying degrees of credibility:

1. Some have proposed such far-fetched notions as a sea serpent, extraterrestrials, devilish entities—even "an indefinable aura" that many believe could not be dismissed. Also, over subsequent years, other keepers reported hearing voices calling out the names of the missing trio (Schneider 2019).

2. Another common speculation is that there was an argument among the men, resulting in one killing the two others and then killing himself. Unfortunately, there is not much evidence for that possibility—except of course that all three were indeed missing (*Lost* 2023, 110).

3. Independent of the lighthouse log, weather records for the area at that time show there was no raging storm as described. Was the log deliberately falsified for some sinister purpose? Yet what could such a purpose have been (*Lost* 2023, 110)?

4. Some armchair theorists had suspected that the three lighthouse keepers had made arrangements for some ship to secretly carry them away so they could all begin new lives elsewhere (Davidson 2022). But that three individuals would reach such a decision together seems unlikely, and why the need for such conspiratorial effort? They could simply resign and go where they pleased.

5. Still another theory was that all three men were on one of the jetties when one slipped and fell into the water. Perhaps the other two keepers jumped in trying to rescue him and were drowned. But each jetty had life preservers for that purpose, and all that would have been necessary was to throw one to the man needing help or otherwise jump in to give assistance (Wilson and Wilson 2000, 130).

Deduction

Let us see if we may begin to collect and piece together some observations and opinions—certain "clues" about this puzzling case.

One thing we must address is the apparent discrepancy between what the lighthouse keepers experienced over several days, namely the strong "storms" mentioned in their daily log, versus what the area's weather records showed for that time—a lack of stormy weather. What may reconcile the two is the difference between storm terminology. According to the *American Heritage Dictionary*, a *windstorm* is "a storm with high winds or violent gusts but little or no rain," a *rainstorm* is "a storm accompanied by rain," and a *thunderstorm* is "a transient, sometimes violent storm of thunder and lightning, often accompanied by rain and sometimes hail." By each using the term *storm*, the two contrary groups had been talking past each other.

When investigators reached the Eilean Mor, they saw clear evidence of "gale damage" on the westward jetty. Also, several ropes were entangled there around a supply crane (used to hold crates for loading and unloading goods), and "turf had been ripped up and supplies destroyed." At that landing platform, damage from waves created by recent windstorms "reached as high as 200 feet above sea level" (Davidson 2022; Schneider 2019). This supports what was written in the log about "severe winds"—validation after all (Johnson 2016).

Now, I call attention to the rash

1. A treatise on lighthouses does give evidence of towers that vibrated considerably during storms or that were unable to withstand the heavy seas to which they were exposed, some being swept away, etc. (as described in the "Lighthouses" entry in the 1960 *Encyclopædia Britannica*).

statement of one writer: "It is almost certain that the truth about the Flannan Lighthouse Mystery will never be uncovered"—famous last words (Davidson 2022). Let this be a lesson to others who, lacking the investigative wherewithal to solve a mystery, dismiss it prematurely. However, they are the first to say—after it has been solved—"Oh, it was obvious." But as Sherlock Holmes observed, everything is obvious *after* it has been explained.

I looked for the official report on the case produced by the Commissioners of the Northern Lighthouse Board and written by Board Superintendent Robert Muirhead in 1901. The report offered Muirhead's opinion regarding the disappearance of the three keepers. They had gathered together on the afternoon of December 15 at the West landing site "to secure the box," a crate on a supply crane. Thereupon, Muirhead theorized that "an unexpectedly large roller had come up on the island." He uses a term that will need clarification for those unfamiliar with marine lingo.

The term *roller* is defined by the *American Heritage Dictionary* as "a heavy swelling wave that breaks on a coast." At the site where the tragedy was unforeseen, Muirhead continued, "a large body of water going up higher than where they were and coming down upon them had swept them away with resistless force" (McCloskey 2014, 75).

I submit that this analysis is supported by overwhelming evidence: the extinguished lighthouse beam, the timing of the damage to the west landing, the nature of that damage, corroborative evidence in the lighthouse indicative of urgency (overturned chair, half-eaten meal), two missing oilskin outfits (the third man, pressed into service, deciding not to climb 160 steps to retrieve his), and so on.

Solved!

We may qualify Robert Muirhead, superintendent of the Commissioners of the Northern Lighthouse Board, as an expert witness in the case. In addition to experience in relevant matters concerning all aspects of lighthouses, he had investigated the Eilean Mor on site and observed the damage and other factors that helped form his opinion. Further, I have rounded up much additional corroborative evidence that supports what he called the "most likely explanation of this disappearance of the men" (McCloskey 2014, 75), naming the probable cause of the tragedy as a "roller," or swelling wave.

Of course, there are always some people who do not like to see a mystery solved—like one I cited earlier who predicted this one's secret would never be revealed. Another writer conceded it was just possible the three men all were overwhelmed by a great wave but felt the men were too experienced to have let that happen (Schneider 2019). Another agreed and wondered "why had none of the bodies been washed ashore" (Johnson 2016)?

The obvious answer would be that Muirhead's "irresistible" roller wave overwhelmed the men and the following waves naturally carried them out to sea.[2] The notion that drowned bodies invariably wash ashore is a mistaken one. The circumstances that tragically killed the three lighthouse keepers at Eilean Mor were necessarily quite different. At least that case has been effectively solved. ■

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2. A variant on Superintendent Muirhead's explanation—that the sea had suddenly given a heave that was possibly caused by an underwater earthquake or even some freak effect of the tides—was subsequently proposed by broadcaster and writer Valentine Dyall in 1974 in his book *Unsolved Mysteries* (Wilson and Wilson 2000, 130). However, Dyall's notion does not seem sufficiently evidential to supplant Muirhead's earlier clearer solution. And Keith McCloskey (2014, 7) writes: "The giant wave theory is almost too obvious, but using the principle of Occam's Razor [that the explanation with the fewest assumptions is most likely correct] it is possibly the correct answer as to what happened."

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Tribal Thinking: Exposing Ourselves to Potentially Deadly Risks

"All the world's a stage, and all the men and women merely players," wrote William Shakespeare in *As You Like It*. A poetic license, to be sure, but one that seems to have a scientific counterpart.

Three centuries after Shakespeare, Canadian-born sociologist Erving Goffman devoted much of his work to studying how people try to constantly present and maintain a positive image of themselves. According to Goffman, social life is really comparable to an act in which, as actors, we try to make a good impression on others, attempting to manipulate, intentionally or unintentionally, the way others perceive us (Goffman 1959).

In 1952, Goffman engaged in the study of victims of fraud and deception and found that, sooner or later, people who have been defrauded realize that they have been deceived—but almost never report the incident (Goffman 1952). Why? The reason lies mainly in the fear of appearing extremely naive: even acknowledging that they have been duped risks a form of social death (i.e., losing friendships, assignments, and business partners) that adds to the harm suffered, and victims try to avoid it like the plague. Here, then, they prefer to deny they have been duped and repeat to themselves they knew all along that it was a scam but may have wanted to see how far the scammer would go. In this way, one protects one's image and avoids social death even if it means letting a scammer go free.

"By prioritising their self-image over the common good, 'marks' make a cowardly, selfish choice," writes sociologist Brooke Harrington. "Goffman doesn't shrink from calling this out as a 'moral failure.'" Today this "moral failure" takes the form of pandemic and vaccine denial continuing even when people find themselves in the hospital. They chose to save face instead of saving the lives of others. "They could do this by telling the truth and exposing the con, saying: 'Covid is real, get vaccinated.' Some do. But many won't. It's difficult not to conclude that some are making a conscious choice to protect themselves socially and emotionally at the expense of the rest of us" (Harrington 2021).

When politicians, TV programs, and influencers began to claim that wearing a mask during the pandemic was not a good prevention practice but rather an attempt to restrict citizens' freedoms, the issue stopped being scientific and immediately became a tribal affair, yet another pretext to divide between "us" and "them." Of course, the informational chaos—and the fact that little was known about the virus at first and improved only little by little as the scientific investigation continued—did not facilitate simple and direct communication.

The World Health Organization itself gave different guidance on the use of masks, which were initially recommended only for frail people and healthcare workers. But one might still wonder why, when it became clear over time that masks really do serve to contain infection, so many people continued to refuse to use them (Chu et al. 2020; Cowling and Leung 2020; Conger 2021).

Some people are just simply misinformed and, as a result, we might think it is enough to present them with all the scientific data to help them see how things really are to change their minds. But this thinking is naive, because it requires that people base their choices and beliefs solely on facts, and we have just seen that this is not the case.

If accepting a fact, even a scientifically supported fact, that goes against what our group believes means risking social death, we will think twice before doing so. Indeed, often we will not think about it at all; we will note what our group says on the issue and support it wholeheartedly. Even if it means exposing ourselves to potentially deadly risks. ■

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[THE PHILOSOPHER'S CORNER MASSIMO PIGLIUCCI

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Are Plants Conscious?

When scientific skeptics think of a purveyor of pseudoscience, they may visualize a somewhat socially awkward dude with a tinfoil hat. Oddly, however, sometimes pseudoscience claims come from credentialed scientists who ought to know better. The ongoing question of plant consciousness is one such instance.

In 2006, E.D. Brenner and colleagues published a controversial article in the mainstream journal *Trends in Plant Science* titled "Plant Neurobiology: An Integrated View of Plant Signaling." Ever since then, the idea that "plants think and feel" has been a small cottage industry that has, predictably, spilled over into general public discourse through podcasts, YouTube videos, and the like.

I am a plant biologist by training and have carried out research that some of my colleagues considered controversial on phenomena such as phenotypic plasticity (the ability of organisms of the same genotype to produce different phenotypes in response to distinct environmental stimuli) and epigenetics (the phenomenon that shows that evolutionarily relevant inheritance is not limited to genes). So this isn't an instance of a conservative scientist set in his ways defending the orthodoxy—at least, I hope not!

But the very notion of plant neurobiology struck me from the beginning as what philosophers call a category mistake: a situation in which someone applies a category where it doesn't belong, such as asking for *the* color of triangles. Triangles qua geometrical figures are characterized by several attributes (three sides, internal sum of the angles equaling 180), but color ain't one of 'em.

Plants have been known to "behave" in complex fashions for centuries, and Charles Darwin himself carried out landmark experiments in this field. But the prefix *neuro-* in biology has always indicated the physiological and anatomical apparatus that allows animals to behave: brains and their associated nervous systems. Plants don't have those, so what could it possibly mean to talk about plant neuroscience?

I wasn't the only one to react that way to Brenner et al.'s paper, and the controversy reached such a pitch that the newly formed Society for Plant Neurobiology quickly changed its name to the more acceptable—if patently disingenuous—Society for Plant Signaling and Behavior.

But science isn't about personal opinions or PR gimmicks; it's about empirical facts and reasoned discourse. One of the most sensible and evidence-based discussions of the whole plant neurobiology controversy that I have read is a critical review, also published in *Trends in Plant Science*, by Lincoln Taiz and collaborators (Taiz et al. 2019). It's a must read for anyone seriously interested in the topic.

Taiz and colleagues point out that much here hinges on semantics, i.e., the meaning of words. While it is fashionable in certain quarters to dismiss such discussions ("It's just semantics!") as irrelevant and pedantic, semantics is important; we communicate with each other using words. If we disagree on their meaning, we risk frustratingly talking past each other.

Plant "neuroscientists" love to use words such as *intelligence*, *cognition*, and even *feelings* liberally, thus constantly underscoring the alleged similarities between plants and animals. But such words have rather specific meanings—especially in a scientific context—and those meanings can't unilaterally be expanded at will just to score a rhetorical point.

For instance, these days *intelligence* has acquired the very general meaning of processing information, as in the phrase *artificial intelligence*. Okay, but then people suddenly shift to the more traditional, limited meaning and tell us that Skynet is about to attack us or that "the Singularity" will surely soon take place. If we want to use *intelligence* broadly, fine, let us agree. But then we also need new words, or at the very least modifiers, for more specific types of processing information, such as those going on inside animal brains.

The same goes for *cognition*, a process that plant neuroscientists say plants engage in because they respond to environmental cues. They most certainly do; *every* living organism does. But we typically reserve *cognition* for some thinking process, not necessarily limited to human beings but definitely requiring a brain. And so on.

Plants are fascinating in part precisely because they are so different from animals. They display a remarkable range of behaviors, which involve internal and external signaling done via hormones and environmental receptors. But these mechanisms are not analogous to animal neurons, synapses, and the like.

Taiz and collaborators mention a paper published by František Baluska and colleagues in 2009 in which the authors liken the root tip to a "brain-like command center." Suggestive and impressive, no? But false. The following year, Hubert Rehm and Dietrich Gradmann (Rehm and Gradmann 2010) demonstrated that the data allegedly supporting the initial conclusions were the result of artifacts generated by the experimental electrodes used by the researchers. Extraordinary claims require extraordinary evidence, and plant neuroscientists have simply not met that basic epistemic demand.

One of the big names in the field of so-called plant neuroscience is Monica Gagliano, who made a splash with the publication in 2016 of a paper in which she appeared to have demonstrated Pavlov-type classical conditioning in pea plants (Gagliano et al. 2016). You will not be surprised to learn that an attempt to replicate the results by K. Markel (2020) failed—suggesting, again, experimental artifacts as the real cause.

Gagliano upped the ante in 2017 by claiming that plants have full-fledged consciousness:

> The ability to learn through the formation of associations involves the ability to detect, discriminate and categorize cues according to a dynamic *internal value system*. This is *a subjective system of feelings and experiences*. … [Since] feelings account for the integration of behavior and have long been recognized as critical agents of selection, plants too must evaluate their world *subjectively* and use *their own experiences and feelings* as functional states that *motivate their choices*. (Gagliano 2017, emphasis added).

There is absolutely no evidence of this. As far as we can tell, plants don't have value systems, do not experience feelings, and have no motivations.

Plant "neurobiologists" make the stunning claim that plants feel pain. On what basis? Because plant responses are reduced by anesthetics such as diethyl ether. But these chemicals are known to have a large spectrum of biological effects, and it simply doesn't follow from observing such effects that a given living organism feels pain. Pain, all the evidence suggests, requires a nervous system.

This has very practical consequences. If plants really do feel pain, the finding would carry gigantic ethical implications, for instance for vegetarians. We better not make such claims without sufficient epistemic warrant.

Taiz and colleagues ask: What do we actually *know* about consciousness? It's popular these days to claim that we

have no clue how consciousness works, but this is simply false. A paper by Todd Feinberg and Jon Mallatt, for instance, summarized the vast literature on the evolution of consciousness (Feinberg and Mallatt 2016). They show that there is an emerging consensus among real neuroscientists that includes the following points:

1. Consciousness is, as far as we can tell, grounded in living processes. So no, you won't be able to upload yourself into a computer, whatever that means.
2. On the basis of what we know so far, consciousness is a phenomenon generated by animals equipped with a complex nervous system.
3. Consciousness seems to require the presence of a brain system overseeing a complex set of neural pathways.
4. The evolution of consciousness has been coupled with a veritable explosion of sensorial modalities in the animal kingdom. Such modalities have required further complexification of the central nervous system as well as the evolution of innumerable feedback mechanisms between the brain and its sensory channels.

Feinberg and Mallatt concluded that the only living organisms that can be reliably said to have consciousness are vertebrates (including fish), arthropods (insects and crustaceans), and cephalopods (octopuses, squids, and the like). Not plants, fungi, or bacteria.

As Taiz and colleagues noted, there is nothing new here. The Romantics of the eighteenth and nineteenth centuries also ascribed feelings and intentionality to plants, in reaction to what they saw as the cold mechanistic philosophy of Descartes and later of the Enlightenment thinkers. Sure enough, contemporary plant neurobiologists tell us to think more like poets and embrace metaphors. Ironically, they accuse mainstream scientists of being animal chauvinists, while in fact it is they who blatantly anthropomorphize plants. And they claim their approach will lead to more concern for biodiversity. But do we need to project ourselves onto other living organisms to care about the environment? Do we want to do so at the expense of sound science? ■

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[BEHAVIOR & BELIEF STUART VYSE

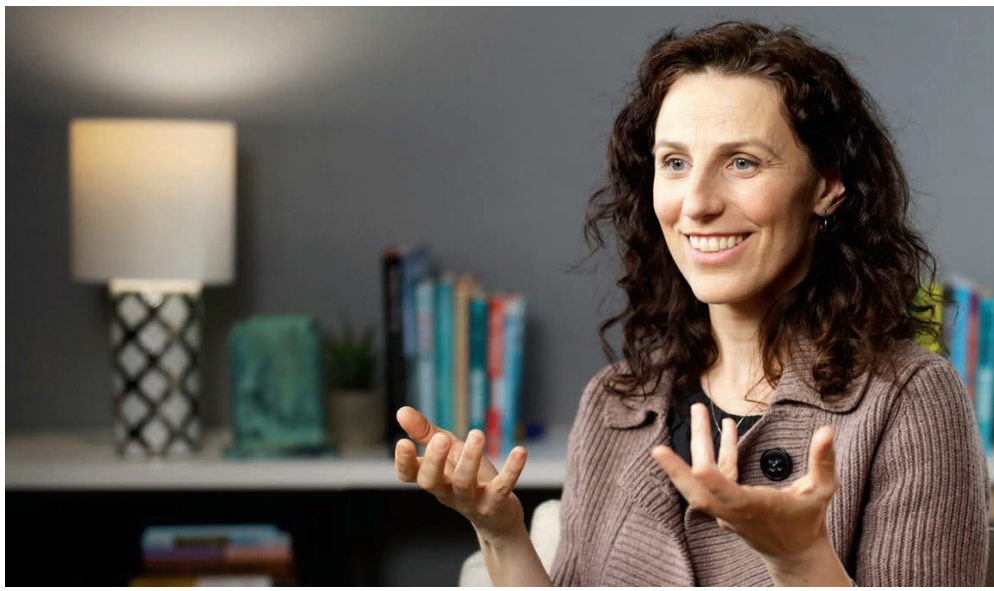
Stuart Vyse is a psychologist and author of *Believing in Magic: The Psychology of Superstition*, which won the William James Book Award of the American Psychological Association. He is a fellow of the Committee for Skeptical Inquiry.

Scientists on Trial: Follow the Money

Shock waves rolled through academia in August 2023 when Harvard Business School professor Francesca Gino sued her employer, Harvard University. The reaction to this news was not merely a result of the lawsuit. Nowadays, professors often sue their employers. The classic case involves a professor who is denied tenure and sues claiming discrimination—an understandable response, because tenure entitles the bearer to lifetime employment, and denial of tenure typically means the professor will lose their job. As a result, the loss of future income following a negative tenure review is substantial.

The Gino lawsuit drew attention for two reasons: the amount and the targets. The amount was $25 million, and in addition to Harvard and the dean of the Harvard Business School, Gino sued three fellow academics: Joe Simmons, Leif Nelson, and Uri Simonsohn. The amount was shocking, and under the circumstances the targeting of the three professors was very unusual. But first some background.

Image credit: Tracie Hall (Wikimedia)



Francesca Gino | X.com

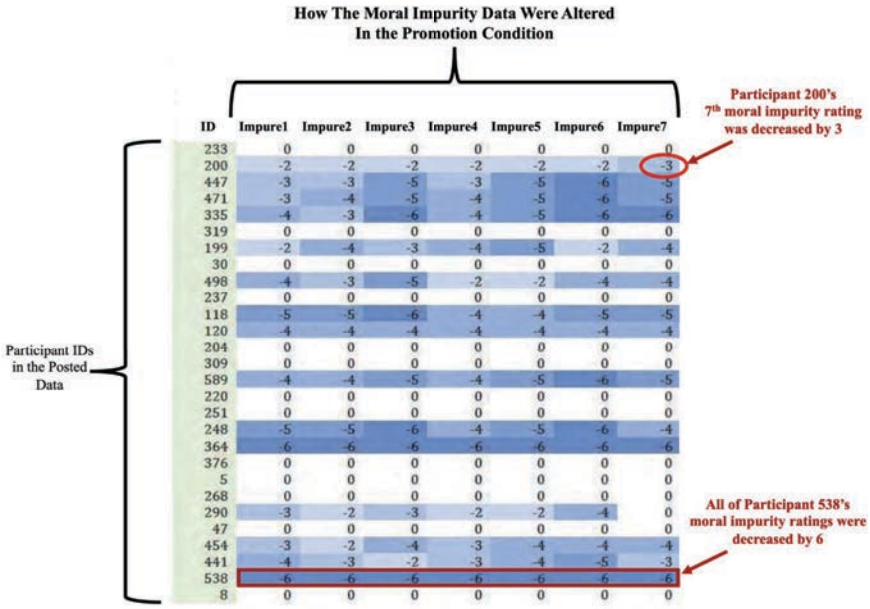
The Claims against Gino

Gino's case has been widely covered in the media (Lewis-Kraus 2023; Scheiber 2023), so I will not go into great depth here. Briefly, she was dismissed after being accused of manipulating data in several studies to make the results more favorable for publication. The three academic defendants in Gino's suit are data scientists who operate a blog called *Data Colada*, where they write about the level of evidence in many social science research publications. Their work is a response to the growing recognition that the discipline of social psychology, in particular, has a problem. As I have discussed in previous columns

(e.g., Vyse 2017), attempts to duplicate the results of many classic studies have failed, leading to what's been dubbed a "reproducibility crisis" in psychology. The *Data Colada* group reanalyzes the results of studies that look fishy and promotes statistical rigor.

According to Gideon Lewis-Kraus writing in *The New Yorker*, the *Data Colada* scientists were approached by a young researcher who was skeptical of one of Gino's published studies. The researcher became even more skeptical when she attempted to reproduce Gino's findings in a new study and none of Gino's published results were duplicated. At that point, the researcher contacted the *Data Colada* group, who launched their own investigation of Gino's research, finding evidence of data fabrication in four published studies coauthored by Gino. Furthermore, the evidence pointed to Gino and not to her coauthors. The *Data Colada* scientists submitted a report to Harvard, and in October 2021 the university began an investigation of Gino. According to Gino's lawsuit, at the conclusion of the internal investigation on June 13, 2023, Gino was placed on unpaid administrative leave for two years, stripped of teaching and administrative duties, barred from conducting research at Harvard, and banned from campus. Finally, according to the suit, the dean of the Harvard Business School informed Gino that he would initiate a procedure to revoke her tenured appointment on the faculty.

The *Data Colada* group had remained quiet through the two-year period of the Harvard investigation, but beginning a few days after Gino was placed on leave, they reported the results of their analyses of four of Gino's published articles in four detailed blog posts (https://datacolada.org/109 through https://datacolada.org/112). Eventually, the entire 1,281-page internal review was released as part of the pre-trial filings to Gino's lawsuit, and it revealed that Harvard had hired an "independent forensic firm" and that the forensic investigation supported the *Data Colada* scientists' conclusions and found additional evidence of data manipulation.


How The Moral Impurity Data Were Altered
In the Promotion Condition
Participant 200's 7th moral impurity rating was decreased by 3
Participant IDs in the Posted Data
All of Participant 538's moral impurity ratings were decreased by 6

ID	Impure1	Impure2	Impure3	Impure4	Impure5	Impure6	Impure7
233	0	0	0	0	0	0	0
200	-2	-2	-2	-2	-2	-2	-3
447	-3	-3	-5	-3	-5	-6	-5
471	-3	-4	-5	-4	-5	-6	-5
335	-4	-3	-6	-4	-5	-6	-6
319	0	0	0	0	0	0	0
199	-2	-4	-3	-4	-5	-2	-4
30	0	0	0	0	0	0	0
498	-4	-3	-5	-2	-2	-4	-4
237	0	0	0	0	0	0	0
118	-5	-5	-6	-4	-4	-5	-5
120	-4	-4	-4	-4	-4	-4	-4
204	0	0	0	0	0	0	0
309	0	0	0	0	0	0	0
589	-4	-4	-5	-4	-5	-6	-5
220	0	0	0	0	0	0	0
251	0	0	0	0	0	0	0
248	-5	-5	-6	-4	-5	-6	-4
364	-6	-6	-6	-6	-6	-6	-6
376	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
268	0	0	0	0	0	0	0
290	-3	-2	-3	-2	-2	-4	0
47	0	0	0	0	0	0	0
454	-3	-2	-4	-3	-4	-4	-4
441	-4	-3	-2	-3	-4	-5	-3
538	-6	-6	-6	-6	-6	-6	-6
8	0	0	0	0	0	0	0

This screenshot shows some of the *Data Colada* analysis questioning Francesca Gino's published research. (Source: datacolada.org/118)

Gino's Claims against *Data Colada*

Gino's lawsuit claims that Harvard violated her rights in several ways, and I have nothing to say about that aspect of her case. It is not uncommon for professors to sue their institutions, particularly when something as valuable as a faculty position at one of the world's most prestigious universities is at stake. Sometimes they win, but often they don't (Marcus and Oransky 2023). My concern is the more unusual case of Gino suing three individual researchers who blog about research methodology—for $25 million. This event sent ripples through the research community, and several observers predicted that it would have a chilling effect on science, limiting free dialogue and intimidating people who might want to write critiques of published research studies.

To outsiders, groups like *Data Colada* might appear to be cynics involved in an essentially negative, fault-finding enterprise, but in my opinion the *Data Colada* group represents the essence of skepticism and good science. If our research is to be of any value at all, it is important that it be subjected to serious scrutiny and—above all—that it be honest. The current reforms of the open science movement in the social sciences—which encourage more transparency and make it harder to manipulate data to the advantage of the researcher—were largely inspired by the revelations of data sleuths such as the *Data Colada* scientists (Vyse 2017). If fellow scientists are not free to voice criticisms and engage in open exchanges with other researchers, the work will suffer and the science will be worse.

To her credit, Gino also expressed admiration for the work of the *Data Colada* team, and on a website she established to defend herself (https://www.francesca-v-harvard.org/), she stated that "the decision to sue *Data Colada* was more difficult" than the decision to sue Harvard. But she chose to do it anyway. From the start, she has vehemently denied any wrongdoing: "I did not—ever—engage in academic fraud." Some of her colleagues have spoken out publicly in her defense (Byrne 2024). Her main justification for suing the three members of *Data Colada* is the claim that blog posts about her work were "false and defamatory."

Follow the Money

How did it come to this? Once upon a time, science was more "gentlemanly" (yes, it was mostly men). There have often been intense rivalries and strong disagreements, but it rarely came to blows. A $25 million lawsuit is a next-level academic dustup. In my view,

much of this comes from the injection of money and fame into a world where it never was before.

There was a time, decades ago now, when writing a book for popular audiences would be frowned upon by most academics. Professors wore black robes, and their work was serious academic stuff. In the natural and social sciences, the job was to publish a lot of journal articles and become revered by other academics. You might write a textbook for extra money, but that did not make you famous. Academics were expected to toil away anonymously in their ivory towers.

Those days are gone. Today, professors write bestselling books, give TED talks, appear on TV, and enjoy lucrative consulting contracts and speaking fees. Today, top professors are rock stars. Prior to June 2023, Gino received one of Harvard's highest faculty salaries at over $1 million a year, and "companies paid tens of thousands more to book her for their private events" (Shin 2023). She wrote a bestselling book, which in hindsight has the rather ironic title, *Rebel Talent: Why It Pays to Break the Rules at Work and in Life* (Gino 2018), and as of this writing, Speakerbookingagency.com still lists her speaking fee at between $50,000 and $100,000.

Francesca Gino is a married mother of four young children (Gino 2021). It must have been an incredible shock to have so much disappear from her life in a single day, and when you consider her potential loss of future income, the $25 million figure is not difficult to understand. Suing the members of *Data Colada*, on the other hand—for any amount, much less for $25 million—is a more difficult move to justify. On her website, Gino wrote "I have long admired *Data Colada*'s work," and she seems to be aware of the chilling effect this act might introduce. I have no direct knowledge, but I suspect Simmons, Nelson, and Simonsohn do not pull down salaries anywhere near that of Gino's former arrangement with Harvard. As evidence of the value placed on the *Data Colada* team's work, a group of colleagues and supporters started a GoFundMe.com campaign to underwrite the trio's legal expenses. Over 3,000 people have donated, and the fund total currently stands at $380,000. It now seems likely that Simmons, Nelson, and Simonsohn will not suffer personally in this case, but for other researchers who might be harboring critiques of published research, the message is clear: The pain and expense of a lawsuit is now a real possibility.

Sometimes scientists have good reason to sue. As reported in these pages (May/June 2024), climate scientist and Committee for Skeptical Inquiry Fellow Michael Mann was recently awarded $1 million in a defamation suit against a pair of libertarian writers who compared his work "to the case of Jerry Sandusky, a former assistant football coach at Penn State University who was convicted of sexually assaulting multiple children" (Naishadham 2024). But the *Data Colada* case seems much different. These three are being sued for an activity that should be a normal part of peer review. As the site RetractionWatch.com documents, peer reviewed articles are regularly retracted when errors or fabricated results are discovered after publication. The four articles coauthored by Gino that the *Data Colada* group critiqued have all been retracted.

It is unfortunate that retractions are necessary, but they are. The continuing scrutiny of published research strengthens the field and bolsters faith in science. In the best of circumstances, when confronted with the evidence, the authors of flawed studies request the retractions themselves. This did not happen in the Gino case, and in my opinion money had much to do with it. The law is supposed to create a level playing field, but in the courtroom, people with resources have obvious advantages. This is not the way science is supposed to be done, but in a world that creates rock star academics making large sums of money, it is likely to continue. Good science also requires an equal playing field, and when researchers cannot speak freely without the threat of legal entanglements, we all suffer. ■

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[THE PRACTICAL SKEPTIC MICK WEST

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The Useful Mandela Effect

Example of the Mandela Effect in *Moonraker,* a James Bond film.

You might remember seeing the 1979 James Bond movie *Moonraker*. It's not one of the better Bond movies (*Esquire* magazine ranked it the second worst), but it has a memorable setting (partly in space) and a memorable villain, the steel-toothed Jaws, played by 7'3" Richard Kiel.

Midway through the movie, Bond is in a cable car high above Rio de Janeiro. In one of the more physically improbable scenes in movie history, Jaws stops the cable car mechanism with his bare hands and then uses his steel teeth to bite through the cable. A fight follows, which ends with Bond escaping and Jaws trapped under a heavy drive wheel.

Dolly, a young woman played by French actress Blanche Ravalec, runs over to help Jaws free himself. Towering over her, he looks down at Dolly and gives his trademark smile of shiny steel teeth. Unlike everyone else that Jaws encounters, Dolly is unafraid. She tentatively starts to smile back. What happens next is one of the more hotly debated topics on the internet.

Dolly smiles back at Jaws, the music swells, and they skip off hand in hand.

Except a lot of people remember that scene differently. The basics are exactly the same, but with one additional detail: when Dolly smiles, they clearly remember that she had braces on her teeth. They remember this because it's funny. Jaws has metal in his mouth, Dolly has metal in her mouth, and they comically fall in love because of this.

But if we look at the movie, now available in high-definition streaming, we see no braces. Dolly smiles, and you see her unadorned white teeth. They still fall in love and skip off together—but not because of shared dentistry.

This is an example of what has become known as the Mandela effect: when a large number of people remember something differently from how it happened in a way that makes them convinced that something very odd is going on.

The Mandela effect is named after Nelson Mandela, the former President of South Africa. The false memory that gave the effect its name is that Mandela died in prison in the 1980s. Mandela spent twenty-seven years in prison for attempting to overthrow the government, but he was released in 1990 and was elected president in 1994. He lived until 2013, a full twenty-three years after being released from prison.

But here's how some people genuinely remember it:

> "I remember in fourth grade reading about how he died in prison in the 80s."
>
> "He died in prison one day. Everyone was talking about it at school."
>
> "Early 2000s, … I remember it super clearly. I remember it was a woman broadcaster. I remember it say-

ing breaking news. It was that he had died in prison. "

"Mid to late 80s. I was a young man. I remember looking up what the word *apartheid* meant after hearing he had passed away."

"I remember when I was at high school I learned that he died in the 80s then later in my life I had seen on the news he died in 2015 in prison. I'm confused!" ("For Those Who Remember" 2023)

We see some variety regarding the date, but all agree that he died in prison. Many recall hearing about it at school. Many express confusion from hearing the news of his death years later because they thought he was already dead.

The original Mandela effect is very different from Dolly's braces, and other examples are all over the map. Many are just misremembering the spelling of names ("Oscar Mayer" vs. "Oscar Meyer"). Some are misremembered movie lines (Darth Vader never said "Luke, I am your father"); others are visual (the Monopoly game character never had a monocle).

However, a common thread with the effect is the absolute conviction with which many people hold and defend their memories despite overwhelming evidence to the contrary. In a discussion about Dolly's braces, you will hear many people say that they are 100 percent sure that the braces existed, and they will often relate a story about how they watched *Moonraker* with their family and how everyone laughed because of the braces joke. Some comments in the discussion thread on a video that added the braces "back in" with special effects included:

"I recall her with braces because of the 'running gag' that it involved. My memory is 100% clear and positive on this one."

"I saw this movie in the theater as a kid three times. Watched it on VHS and TV several times in the 80s. I 100% guarantee you Dolly had braces in that scene."

"Me and a friend watched *Moonraker* in the 90s, VHS, and we both remember the 'joke' of her smiling at him with big shiny braces." (RomThirty VFX 2017)

So, what's going on here? Psychologist and skeptic Massimo Polidoro explains that these false memories are surprisingly easy to create. He gives an example of a list of words that have a common theme. When asked to recall all the words on the list, half the people tested added the word that described the theme, even though it was not on the list (Polidoro 2022).

Polidoro says the Mandela effect is just a natural consequence of the way memory works. Our brains are not recording devices. Memories are constructed from pieces rather than played back as from videotape. Sometimes a piece is missing, and sometimes your brain helpfully fills in the gap. For example, when trying to recall that list of words, your brain will helpfully provide your memory with words that were never there but *feel like* they were (or should have been).

Other memory researchers, such as Elizabeth Loftus, have found that false memories are indistinguishable from real memories. In other words, if you think you remember something, then from your perspective, it's exactly the same mental experience regardless of whether that thing actually happened.

But most people don't know this, and many people reject the idea. They *know* what they remember and reject any attempt to tell them otherwise. They are then faced with a problem. Faced with an inviolable belief that something happened a certain way and very strong evidence that it did not, cognitive dissonance arises. To solve this dissonance, they must come up with an explanation for why the evidence points the other way.

The simplest explanation is that everyone else is wrong. They *know* they are correct, so somehow other people made a mistake. This can be a satisfying theory if you don't look too deeply into the discrepancy, but it falls over when there's substantial, objective evidence (such as a film scene to reference).

Another simple explanation is that both versions of the past are correct. Perhaps Curious George had a tail in some books but not in others? It's a neat way of resolving dissonance, but it also falls over based on the evidence.

We then start to get into the more implausible theories. They simply know their memory is correct, but the evidence contradicts it, so therefore the evidence must be wrong. In this hypothesis, the contrary evidence, such as the version of *Moonraker* online, must have been changed after their memory formed. So, they watched it in the 1980s, and then the braces were removed in later DVD versions.

Why would someone do that? Perhaps it's the director's cut, like how, in *E.T.*, the guns were later digitally replaced with walkie-talkies (this actually happened). Or perhaps it's something more nefarious, some mind control by the government trying to implant certain things into our collective consciousness, or perhaps even introducing the state of cognitive dissonance they are now experiencing.

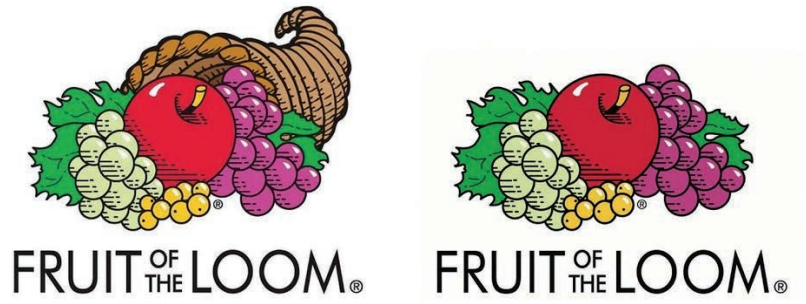
With both halfway sensible and ridiculous versions, that hypothesis also falls over with the evidence. There are old VHS tapes of *Moonraker* going back to 1982 that show Dolly with no braces. Yet people remember seeing those braces in the late 1980s or 1990s. Even more conclusively, Blanche Ravalec confirmed that she never wore braces, and production photos taken on set show her without braces (MI6 staff 2016).

Lacking any evidence predating their memory—and being certain their memory is correct—the Mandela effect experiencer has only one option left: they must question the very nature of reality itself.

There are a few versions of this. In one, the Mandela effect represents "glitches in the matrix." The inconsistencies are supposedly evidence that we are living in a simulation. The differences are bugs, errors caused by bad programming by the gods or perhaps deliberate glitches induced as experiments by this Universe's creators (although it's unclear why they would bother with something as trivial as Dolly's braces).

In (even) more extreme hypotheses, the effect arises because of incomplete bifurcations of the universe. Under the Copenhagen interpretation of quantum physics, at each quantum event the universe splits into parallel versions that exist simultaneously. So there's an infinite number of universes where Dolly had braces and an infinite number where she did not (and an infinite number of variations).

To explain the Mandela effect with this "many worlds" theory, they must posit some leakage between universes,



Mandela Effect of Fruit of the Loom logo—many people remember there being a cornucopia. Credit: Lnobse | fandom.com

perhaps at the level of consciousness, where physical reality is from one universe and spiritual reality is from another.

This is, of course, ridiculous. Common sense—and Occam's razor—tell us that people are just misremembering things.

But it is this ridiculousness that makes the Mandela effect a useful tool for skeptics. It serves not only as a great set of examples of how people can misremember things but also as material showing how people can create theories to explain falsehoods.

Many things that we deal with as skeptics, from belief in the supernatural to supposed encounters with flying saucers, are based on some false memory. And just as with inconsequential false memories, such as the Fruit of the Loom logo featuring a cornucopia (it did not, except briefly on April 1, 2022, for April Fool's Day), the false memories that underly these topics are fixed in the mind of the individual. Their ghost sighting or UFO encounter is just as real as any other memory, so they cannot be persuaded otherwise with things such as references to academic articles.

But with the Mandela effect, we have a vast body of readily accessible evidence that shows that memories can easily be false and that people are easily persuaded that those false memories are true—to the extent that they will doubt the very nature of reality itself.

Of course, you are unlikely to persuade the people who are now convinced we are living in a simulation or at an intersection of parallel universes, but many people have false beliefs that are both more mundane and more consequential (e.g., contrails didn't exist before 2000, hence chemtrails are real).

Some of those people can be persuaded by the combinations of contrary evidence about their beliefs and the vast body of evidence in the Mandela effect showing how the accuracy of memory is a powerful illusion. The Mandela effect, silly though it is, should have a place in the skeptic's ever-expanding toolbox. ■

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[THE TIME WARP: SKEPTICISM REVISITED—FROM THE FUTURE

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Ancient Aliens, Now Extra Cringey

Welcome aboard, friends! In The Time Warp, we aren't limited to present-day examinations. We use Skeptical Inquirer's rich history to examine skepticism … from the future.

On this voyage, we travel to Winter 1978 and the sixth installment of Skeptical Inquirer (Vol 3, no 2). Some historical glitter to prepare us for our journey: Freak out! Chic's *Le Freak* was a huge hit, reaching #1 one on three separate occasions (December 9, 1978; December 23, 1978; and January 20, 1979). Neptune overtook then-planet Pluto for being farthest from the sun (January 21, 1979). Cult movie classic *The Warriors* was released (February 9, 1979).

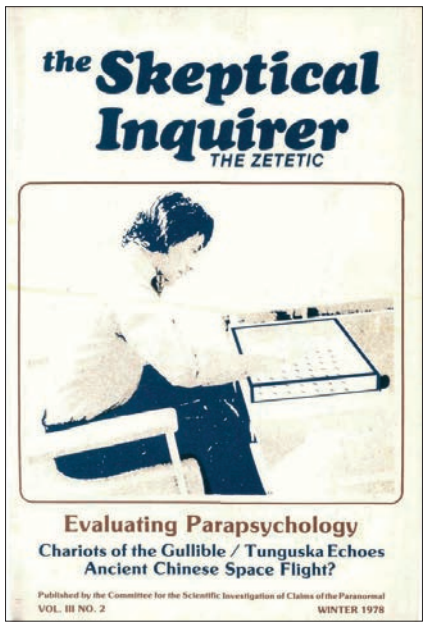
And Skeptical Inquirer came out to play. Unlike preceding issues, there was no initial commentary clarifying the purpose of CSICOP or the magazine. This issue rocketed straight into late-1970s skepticism.

Some Skeptical Thoughts from the Time

Paul Kurtz was unconvinced by the evidence used to support parapsychology, but he invited parapsychologists to bring future findings to skeptics. An annotation to the article indicated that J.B. Rhine, a prominent parapsychologist, had been invited specifically.

James Oberg dismissed the theory that the Tunguska explosion of 1908 was caused by an interstellar spaceship. Oberg expressed concern that the spaceship claim was distracting people from the real danger presented by comets.

Legendary science fiction author Arthur C. Clarke suggested, whimsically, that Martians used advanced technology to hide all traces of their existence from the Mariner and Viking space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Published by the Committee for the Scientific Investigation of Claims of the Paranormal
VOL. III NO. 2
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probes. Clarke suggested that Erich von Däniken and Charles Berlitz were "racing each other to present these sensational conclusions to the world" (79).

Deep Dive

I wish Clarke were alive to consider ancient alien "vonsense" today.

To recap, von Däniken took an existing ancient aliens premise into hyperdrive with the 1968 publication of his book *Chariots of the Gods?* In the book, von Däniken suggested that extraterrestrial visitors were responsible for the rapid technological advancement of ancient civilizations. Von Däniken also suggested that alien visitors might have contributed to human genetic advancement by fertilizing specially selected women.

Von Däniken's packaging of the ancient alien claim was tremendously popular despite its enormous historical and biological problems. His work generated a feature-length documentary released in the United States in 1973, and he subsequently published additional work that further promoted ancient alien speculation.

The topic of ancient alien visitation was popular and impractical, making it a natural fit for skepticism. The Winter 1978 issue addressed ancient aliens thrice, in addition to Clarke's humorous letter.

Kendrick Frazier described how George Alexander, then president of the National Association of Science Writers, criticized United Press International's coverage of an ancient aliens conference.

William Sims Bainbridge used belief in ancient aliens to test sociological theories about deviant behavior. The obtained results suggested that ancient alien belief was "part of a generalized occult and pseudoscientific subculture" (41).

David N. Keightly explained why an ancient Chinese bone carving was no ancient alien secret. An ancient aliens supporter had suggested that the carving showed a man and woman visited by a shapeshifting alien that departed in a rocket-propelled vehicle. Keightly demonstrated how this interpretation deviated insensibly from the true linguistic and historical context.

Previous issues of the magazine offered similar responses to the notion that ETs were ancient educators and human impregnators. Collectively, the skeptical response to the ancient alien promotion makes two fundamental points: First, historians have developed an understanding of ancient history based on centuries of extensive, careful research. Ancient alien enthusiasts show no appreciation for this evidence. Instead, they mislead the public by pre-

Ancient Aliens promo image. Credit: History Channel

senting fraudulent, mistaken, or creative interpretations of hand-picked historical events while omitting evidence to the contrary. Keightly's article about the ancient Chinese bone carving provides an excellent example of such ancient alien absurdity. Second, ancient alien belief seems to stem from, and encourage, implicit or explicit racism. It robs ancient people—typically non-Europeans—of their ingenuity. It confuses differences in technological innovation with differences in intelligence.

These problems notwithstanding, ancient alien belief remains alive and well today. Ironically, technological advancements (presumably human-achieved advancements) have changed the nature of ancient alien arguments and scientifically skeptical responses.

The contemporary ancient aliens promotion is shared primarily through the *Ancient Aliens* television series broadcast frequently on one of the modern pseudoeducational channels, and Ancient alien supporters can share their enthusiasm for their pseudohistorical claims via the internet.

The response to ancient alien belief has also changed. Traditional ancient alien repudiation can be found in Kenneth L. Feder's fabulous book *Frauds, Myths, and Mysteries: Science and Pseudoscience in Archaeology*, but this work is now complemented by online videos and podcasts devoted to bringing ancient aliens claims back to Earth. To wit, Fredrik, the friendly host of the *Digging Up Ancient Aliens* podcast (see diggingupancientaliens.com), provides keen insights into the differences between genuine archaeology and the ongoing pseudoarcheology offered by the *Ancient Aliens* television show.

Post-Warp Summary

Scientific skeptics in 1978 would likely be shocked and dismayed by the popularity and nature of the ancient alien promotion in 2024. Nevertheless, the fundamental problems with ancient aliens haven't changed, and there isn't a compelling need to review them. This commentary shows places where interested readers can find more information.

Instead, a trip to 1978 can help us examine how society has changed around the concept of ancient alien visitation.

Contemporary society is less accepting of depicting groups in stereotypical ways than it was in 1978. This is evident in movie scenes that were broadly acceptable decades ago but are emotionally uncomfortable today. Likewise, the claim that certain ancient cultures—such as those inhabiting Easter Island, Egypt, or the Americas—needed some off-planet help is, to use a modern colloquialism, seriously awkward.

Chariots of the Gods? (the movie) even delivers the cringey moment when "primitive" World War II South Pacific Islanders respond to contact with Americans by staring at the sky, hoping that the "technologically superior" people will return. This depiction, clearly inspired by a genuine cargo cult phenomenon, is callously twisted out of its legitimate historical context.

I suspect that the *Ancient Aliens* producers recognized its patronizing overtones and added new ingredients to address the public's distaste for implicitly racist themes. One *Ancient Aliens* episode examines whether extraterrestrials were responsible for Albert Einstein's achievements. This speculation, while neither practical nor ancient, does at least suggest that a European received some help too. (On that note, I'm looking forward to the *Ancient Aliens* episode that investigates whether some ET gave the green gown to Isaac Newton's mom.)

To skepticism's credit, skeptics identified the race-based implications of the ancient aliens promotion long before a more recent social justice movement brought extra attention to implicit and explicit racial bias (see, for example, "Von Daniken's Chariots: A Primer in the Art of Cooked Science" by John T. Omohundro, Fall/Winter 1976).

Thus, the history of the ancient aliens phenomenon should remind skeptics that our shared focus on evidence and reason does work even if it takes some time. We just need to stick to the process. After all, I don't think we're going to receive any help from gods or aliens.

Archaeology *and* skepticism. Can you dig it? ■

Note

The views expressed belong to the author and do not necessarily reflect the official policy or position of Northshore School District.

[SKEPTICAL INQUIREE BENJAMIN RADFORD

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Parsing Possession: A Woman and Her Possessor

Q: **Have you ever been in the same room with someone who was possessed or undergoing an exorcism?**

—S. Rob

A: There are several subcategories of possession. The context of this question was Roman Catholic possession and exorcisms specifically—the kind most people are familiar with through pop culture (especially horror films such as *The Exorcist* and its countless copies). Past lives and reincarnation also often involve a form of possession, especially when supposedly dead people are claimed to inhabit (or speak through) the living. In some cases, people believe they are channeling long-dead Atlantean warriors (e.g., J.Z. Knight's "Ramtha"; see Gardner 1988), great composers, or artists; other times the circumstances are more concerning (for example, I once investigated a case of a four-year-old boy told by his parents that he was possessed by the ghost of a dead soldier; see Radford 2015a).

Most religions claim that humans can be possessed by spirits and offer guidance to address this situation. The Bible recounts at least six instances of Jesus casting out demons, while voodoo and Catholicism proscribe elaborate rituals and cleansings to remove even stubborn spiritual stains. Whether it's defined beneficially or malignantly (i.e., channeling or possession) depends on the context—and more importantly on the assumptions, worldviews, and interpretations of those involved.

Over the years, I've been in the presence of several people who claimed—and, as far as I could tell, sincerely believed—that their bodies and/or minds were inhabited by external intelligences, ranging from angels to ghosts to demons. One of the strangest cases began in 2021 with a curious email to me with the subject line "I need a skeptic." The email read:

> I am reaching out to you through a special woman. I've been inside her for five years. She reached out to me when I was asleep. I did not even

> know I died. It was only now, that I could speak through her and use her voice! Now I want an opportunity to be heard, so I picked you—a skeptic who would accept a challenge, that would help those who lost loved ones! Only my loved one, [Olivia], knows about this awesome paranormal existence! We are both so excited about this! Ben, you are the only one who knows besides us! We are both so excited and looking forward to your response!

It was signed with both of their full names (though she consented to me recording and reporting details about this case, I'll use the pseudonym Olivia to represent the sender of the email and John to represent her reported possessor).

I didn't know what to make of her story, but I charitably proceeded on the assumption that Olivia was sincere. I fact-checked what little information I could; somewhat to my surprise I did indeed find an obituary for John. His details matched the details shared by Olivia. He'd been a firefighter, EMT, and rescue diver. Photos revealed a handsome, boyish man whose adventurous spirit was evident. His passions included skiing and boating, though I learned from an obituary page that John loved riding his motorcycle and traveling across the country. I also found a comment left by Olivia expressing regret that they'd lost touch in recent years and fondly remembering that he was kind to her and loved her.

There were ways I could ostensibly prove whether a dead person inhabited Olivia's body; I outline some techniques to falsify spirit communication in my book *Investigating Ghosts: The Scientific Search for Spirits*. But my priority was helping Olivia, not a skeptical Pyrrhic victory. If the case was notable enough—and the claimant prominent enough—it *might* be worth investigating from that angle. It would mean researching the details of John's death; eliciting factual, falsifiable information that only John would know; carefully screening out claims that would be obvious to his friends, statistically likely, or could be easily guessed; contacting his friends and family; and so on. Though in theory testable, it was not worth the time, expense, and emotional disruption to Olivia or John's family. No skeptical outcome was worth the risk of harming a grieving family.

I had reservations about taking on the case, which reminded me of another incident years ago when a woman reached out to me for help removing a curse (Radford 2015b). Sensing an opportunity to help Olivia, I replied asking for more information and arranged a video chat about a week later.

Meeting 'Olivia'

Olivia appeared onscreen: a middle-aged woman with short hair and light blue eyes framed by rectangular glasses. Olivia was polite, though often unfocused and rambled between sporadic facial tics. Her jaw would clench, her lips pursing and twitching in different directions. Her eyebrows would rise in exaggerated ways. I would often redirect and gently probe for clarifying comments, wanting to understand while not making her feel foolish, doubted, or defensive (though of course she knew I was a skeptic when she contacted me and specifically cited that as a reason for reaching out to me).

I asked Olivia how John first came to possess her.

> I got in touch with him on a Ouija board almost six years ago. I was in Cape Cod at the time, and the guy that I rented from, he partied hard. He was having a party with it, and I was like, I don't want to party with the Ouija board. So I took it upstairs to my bedroom. And then I said, "John, if you're here, give me a sign. You don't have to say anything … do something with my lips, like yes or no."

This is analogous to ways in which ghost hunters will try to establish that they are being contacted by a spirit, such as moving a so-called "trigger item" or making a tech device register (for more on this, see Kenny Biddle's "Ghost in the Machine" series [Biddle 2023]. Olivia said that she then felt her lips twitch, proving to her that she was in the initial stages of being possessed by John: "He was able to tell me when he was sad, when he was laughing, when he was crying, everything by the way he moved my lips."

I asked what information she was getting that made her sure it was John and not some other ghost.

> Well, I was sure it was him because I asked him a lot of questions about where we were and everything like that. John told me a lot of circumstances because he wants to get in touch with his brother, so that I would believe him and his brother. So he gave me a ton of knowledge about things only his brother would know. He wants to get in touch with his brother so badly, and we've been fighting about that.

This was the first indication I'd seen that there was some tension between the possessed and the possessor. I replied, "I'm trying to figure out why would John be angry at you if *he* came to *you* through a Ouija board?" She replied, "Because he wants to contact his brother immediately and I don't want to because I contacted his friend Jane and she hung up on me. I don't want to be accused of being crazy."

Meeting 'John'

John's possession of Olivia seemed at least in part to be a way to facilitate communication and separate it from the clunky Ouija board. John apparently communicated to Olivia through intrusive thoughts, lip movements that Olivia interpreted as representing his thoughts, and outright speech. John's choice of a Ouija board to communicate with Olivia was curious, and she gave no indication that he was interested in the occult (why not just appear to her in a dream or as a ghost in her room?). It did, however, adhere to popular assumptions and beliefs about the game as a conduit to the netherworld.

Then she said, "It took me a while to understand. But now he has a voice, so you can ask him." Before I could reply, Olivia took several deep breaths. Her posture stiffened, her expression changed, and her voice deepened. John addressed me directly: "I really want to speak with my brother, and I have a lot of stories that only he would know, so I just want Olivia to please call my brother. But she won't, and I'm really angry at her for not doing that."

I had neither asked nor expected to interview a channeled spirit, but here he was. I softened my tone slightly and addressed John. "John, why did you choose Olivia to be your conduit, to be your mouth?"

"I didn't. She chose me."

It wasn't clear what John meant by that, whether Olivia reaching out to him specifically had summoned him and initiated the possession. Rather than parse it out, I probed a different direction. "Is there a reason that you can't or won't contact your brother directly?"

John ignored my question. "Olivia doesn't want to because she would feel like a freak and she called my friend Jane many years ago and she hung up on Olivia." (This was, of course, what Olivia had told me earlier, albeit in the first person.)

I tried to get the interaction back on track and changed my tone:

> Olivia, let me ask you, are you comfortable with him being inside you or would you prefer to sort of have your life back? It's got to be confusing and stressful to you, as it would be for anybody. Is this something that you want to have resolved? Would you be happy if John went ahead and contacted his brother and left you out of it, or do you want to continue to be a conduit for him?

"Is that what the word is? *Conduit?*"

"Or medium, or whatever. Vehicle."

"Yeah, sometimes I just want to drop him off. Absolutely."

I replied, "People handle grief differently. Some people would be delighted to hear from their loved one, other people would be terrified, other people sort of leave it in the past. Everybody's different." Though my comment was for Olivia, John offered a curt retort: "It doesn't matter, okay? I just want to talk to my brother. Can you help me with that? That's all I want. Olivia is not helping me. She just is afraid, and I don't understand why she just does not talk to my brother."

I soothed John as best I could. "John, calm down. I don't know your brother; I've never met him. I never met you in life. I only met Olivia half an hour ago so I can't help you with that. What I can do is try and help the both of you to resolve this." I then tried a different tack—one that Olivia/John would need to resolve.

> Well, John, would it work if you gave him a message? It's not fair to Olivia to have her going through this. I'm looking at her right now. She's obviously in distress. There's anxiety, there's confusion. So, John, if you have a message to give to your brother, just to have Olivia write it out or record something on video or something else and give it to him. If that goes somewhere fine, if not, fine, but it's not fair to Olivia for you put this on her. If your brother wants to contact you, he'll contact you. It's the same thing in life. You can't force people to listen to you.

Olivia's mouth twitched pensively. I added, "If Olivia can't or won't do it, you need to find someone else. There's no point in harassing and causing stress and anxiety for Olivia. I know you loved her in life, so don't do this to her. John, if this is so important to you, then either do it yourself or find some other person to contact your brother. Olivia is not the only person that can do this."

"But she is the only one I have talked to," John replied petulantly.

My voice took on a harder and more authoritative edge as I practiced spirit diplomacy. "I understand that. But you can't force other people to do your work for you. If you want to reach out to your brother, then do it without Olivia. When you were alive you did lots of amazing things without help. You can do this. All Olivia can do is to contact your brother and send him a message through email, Facebook, whatever. Olivia can't force your brother to understand things. I want to talk to Olivia now."

John complied, and Olivia's expressions returned. She said, "I'm here."

> Olivia, you heard what I told John. I'm not going to argue with either one of you. You asked for my help, and I'm telling you what to do. Either contact John's brother and say, look, it's me. I have a message and contact me if you want. And John can't be mad at you if it doesn't go anywhere. The second option would be to record a video or write down, you know, basically would be called automatic writing. It'd be channeling the messages and give them to him. In either case, your work is done. John will always be in your heart and memories, and that's okay. But he needs to leave your body. If John keeps up, just remind him we spoke, and that you did all you could. You need to focus on yourself, make things work for you.

Several weeks later, on October 29, I got an email from Olivia with the subject line "Dissolved Relationships" thanking me for my help. "John will no longer be contacting me," she wrote. I replied on Halloween, "I'm glad … I could tell the situation was causing you stress and once we explained everything to John it would help settle the matter. Hopefully things will start looking up!"

This strange case holds several lessons about the promises and perils of investigative skepticism. It's important for skeptics, educators, and philosophers to promote critical thinking and skepticism as an abstract social good. But on an individual level, out in the trenches, there are many people vulnerable to the harms that can accompany belief in demons, ghosts, evil spirits, conspiracy theories, and the like. That is, I believe, an important function filled by skeptics willing to engage with the public. We can't help everyone, but we can help some. Others may have handled the situation better than I did, and staunch skeptics may complain that I didn't defiantly debunk John's possession. But if the goal is helping those in need—instead of, for example, proving a point—then you must make compromises and meet people where they are. Last I heard Olivia was happy, moving forward, and John-free. ■

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The Truth about Sallie Winchester and the Mystery House That Never Was

ADRIENNE HILL

Editor's note: The Winchester Mystery House has appeared in Skeptical Inquirer a few times over the years. Most notably, Joe Nickell (2002) and Karen Stollznow (2011) previously corrected misperceptions about the house and its most famous owner. Our cover story shows how earlier SI reporting combined with other valuable sources (e.g., the Skeptoid *podcast) help improve the accuracy of information on the internet through the Guerrilla Skepticism on Wikipedia project.*

My research adventure started in 2022 when Brian Dunning released a podcast titled "Demystifying the Winchester Mystery House" (Dunning 2022). Susan Gerbic posted on the Guerrilla Skepticism on Wikipedia (GSoW) Facebook page that Dunning was unimpressed with the Wikipedia page about the subject and asked if anyone would like to take on the project. I volunteered, unaware that Sarah Winchester would become a significant part of my life for more than a year, after which I finally had a chance to visit her well-known home.

Image Credit: ItsStuffy | Shutterstock.com

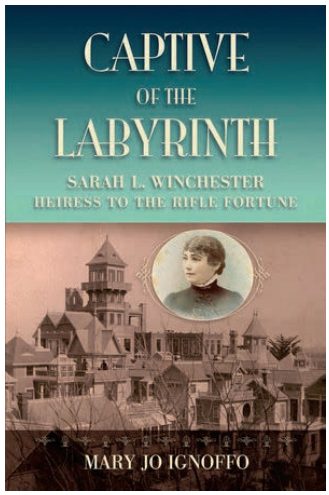
The author at the Winchester Mystery House waiting for the Walk with Spirits Tour to begin (photo by Adrienne Hill)

As I continued my research, I became increasingly angry over the common portrayals of Sarah Winchester, the woman behind the creation of the Mystery House. Many of them started while she was alive. Fake news has been around for a long time. On March 29, 1895, for example, the *San Jose Daily News* published:

> **Strange Story: A Woman Who Thinks She'll Die When Her House Is Built.** Ten years ago the handsome residence was apparently ready for occupancy, but improvements and additions are constantly being made, for the reason, it is said, that the owner of the house believes that when it is entirely completed, she will die. This superstition has resulted in the construction of a maze of domes, turrets, cupolas and towers, covering territory enough for a castle. (Dickey 2016, 63)

It would not be unusual during this period for journalists and the general public to believe that the reclusive woman was superstitious given that she lived during the height of the Spiritualist movement that started with Transcendentalism in the 1830s. It then became popular in 1848 with the Fox Sisters, who were notorious for fooling others into thinking they could talk to the dead (Nickell 2012, 185; Dickey 2016).

Some journalists, Winchester's staff, and friends—including her close companion until her death, Miss Henrietta Servers—tried to set the record straight; Winchester, they said, was not superstitious or irrational. Unfortunately, their protests were to no avail (Dickey 2016). Fortunately, the book *Captive of the Labyrinth* by Mary Jo Ignoffo (2010) depicts a more accurate portrayal of her life and was used as a major



[Left] *Captive of the Labyrinth* book cover. [Right] Portrait of Sallie Winchester (credit: Wikimedia Commons)

source for my research for the Wikipedia page and this article.

A Brief Biography of Sallie Winchester

Let's set the record straight by first correcting her name. The woman known as Sallie Winchester was born Sarah Lockwood Pardee. Soon after her birth, her paternal grandmother, Sally Pardee Goodyear, died. Sarah's parents subsequently replaced the name "Sarah" with the name "Sallie," which she went by for the rest of her life. Even her correspondence was signed with the name Sallie. Henceforth, I will refer to her as such.

Sallie Winchester was born in 1839 and married William Wirt Winchester in 1862. William was the son of the founder of the Winchester Repeating Arms Company. They had a daughter in 1866, who died a month later from a medical disorder. From 1880 to 1881, Winchester lost three close family members: her mother, father-in-law, and husband. William died from tuberculosis. Winchester's health was also deteriorating due to rheumatoid arthritis.

Llanada Villa

My next correction will be the name of her house. In 1886, Winchester moved to California and purchased what would later be called the Winchester Mystery House in the Santa Clara Valley. However, she named the property (on which the house was situated) Llanada Villa because it reminded her of Llanada Alavesa from the Basque area of Spain, an area beloved by she and her husband. When she purchased the property, it was a ranch with a modest two-story, eight-room farmhouse.

Because William and Sallie Winchester had been passionate about architecture and interior design while building a home in New Haven, Connecticut, it seemed natural for Winchester to attempt to plan the expansion of her new California home. After hiring and dismissing several architects, Winchester decided to lead the project herself. According to Colin Dickey in his book *Ghostland: An American History in Haunted Places*, Winchester was an architectural pioneer (Dickey 2016). Unfortunately, this independence (and her reclusiveness) resulted in rumors of her being irrational and su-

Picture of James Van Praagh performing séances at the Winchester Mystery House (photo by Adrienne Hill)

perstitious, especially because the construction project lasted for many years.

When Winchester died in 1922, the house was in such disrepair that it could not be sold. John and Mayme Brown leased—and eventually purchased—the house, turning it into an attraction and causing the lore and mystery of Sallie Winchester to grow and twist in scale like a good fish story. The attraction was opened only nine months after Winchester's death and has remained open ever since with many modifications to the home made by the Browns.

The Winchester Mystery House

If you do an online search for the Winchester Mystery House, most of what you will find is the supernatural lore describing Winchester as paranoid, eccentric, and crazy. She was portrayed this way by Helen Mirren in the 2018 horror film *Winchester*—touted, of course, as "inspired by true events." I was pleased to see the movie nominated for the 2019 Golden Raspberry Awards for *worst* picture, actress, director, and screenplay (Razzie Channel 2019). In addition, Joe Nickell gave a rating of "one wooden nickel" (Nickell 2018).

Most of the lore about the Winchester Mystery House can be found in a souvenir book available for purchase at the house itself. I have two versions of the book, an undated edition and the 100-year anniversary edition published in 2022. A difference I noted between the two books was that the anniversary edition added a section on psychics who have visited the house—including Sylvia Browne and James Van Praagh—as well as ghostly television shows that have been filmed there, such as *Ghost Adventures* with Zak Bagans and *Ghost Brothers*. Also, in that edition, the "spirited" stories have a more questioning tone: "Why did Sarah spend so much time, money and energy to live the way she did? Why did she build what is arguably one of the world's oddest houses? Was she obsessed by the ghosts of those killed by the Winchester rifle? Did she use the endless building and rebuilding as a way of distracting herself from her grief over the deaths of her loved ones? No one will ever know the answers" (Winchester Mystery House 2022, 47). This stated conclusion is essentially untrue. Documented and reasonable answers have been found by several investigators, including paranormal investigator Joe Nickell and author and historian Mary Jo Ignoffo.

Instead of reimagining the tours, the attraction staff have dug in their heels, as exemplified by an employee who attempted to revert my work on the Winchester Mystery House Wikipedia page back to the error-riddled, pro-spirit sensationalism that had previously plagued the page. When this was unsuccessful, they argued to include only historical facts, removing any alternative explanations of the lore. One staffer wrote, "Hi All! I will be making edits to this page due to some incorrect & inaccurate information. This page is the 'Winchester Mystery House' page which should only be touching on the house as an official historic landmark in the state of California. I am an employee at The Winchester Mystery House and many of the recent edits were made using one of the only biographies written about Sarah Winchester. … The author did not interview anyone affiliated with the house and many of the edits to this page are opinions" (Wikipedia Talk 2023).

Here is one of the many responses made by experienced

The author in front of the Winchester Mystery House. Image credit: Jane Selkie.

Screenshot of a Wikipedia edit that another editor quickly reverted (Wikipedia View History 2023)

editors unrelated to GSoW to show how well Wikipedia generally works:

> We give the most weight to independent expert opinion on a topic. In the case of topics that feature marginalized viewpoints, we lean towards the mainstream. And mainstream scientific consensus rejects explanations that embrace the paranormal, supernatural, ghosts, demons, etc. So in this case, we have Joe Nickell, Mary Jo Ignoffo, Brian Dunning, Katie Dowd, Colin Dickey, etc. writing in line with that scientific consensus, and also as experts who are (importantly) independent of monetary incentive to promote mystery, drama, superstition, hype, etc. (Wikipedia Talk 2023)

In the end, my Wikipedia edits prevailed. After completing the Wikipedia rewrites, I was invited to speak at the Monterey County SkeptiCamp in January 2024. Part of the allure of attending was a promised visit to the Winchester Mystery House. The day after the SkeptiCamp, we went on two tours—the Walk with Spirits Tour and the Guided Mansion Tour. In what follows, I will break down the most common stories, contrasting the misleading claims (most of which appear in the souvenir book) with the researched reality. This section was influenced by several key resources (Biography.com Editors 2020; Dickey 2016; Dunning 2022; Ignoffo 2022; McAndrew 2018; Nickell 2002; Nickell 2004; Nickell 2012; Roberts n.d.; Stollznow 2011) and emulates the example of Nickell's SI article titled "Winchester Mystery House: Fact vs. Fancy."

Inheritance

Fancy: Winchester is often purported to have received a total inheritance of $20,000,000, earning $1,000 per day in royalties.

Facts: After her husband's death, Winchester owned 777 shares of the Winchester Repeating Arms Company for a total value of $77,000, paying an average of $7,770 (or $21 per day) in dividends per year over a five-year period. While these amounts were still incredible for the time, they were nowhere near the claimed inheritance or royalty amount. I thought that perhaps someone had attempted a calculation based on inflation. According to the CPI Inflation Calculator when I did the calculation in 2023, the $77,000 inheritance would equate to about $2,340,000. In addition, Winchester did inherit $300,000 in stock in 1898 when her mother-in-law died, about $11,050,000 in 2023 dollars. Someone had an active imagination when it came to Winchester's finances. This imagination reached new heights in December 2023, when an edit, which was quickly reverted, was added to the Sarah Winchester Wikipedia page stating that she had a salary of $500 million!

Continuous Construction

Fancy: The work on the house never stopped. It continued for thirty-eight years, around the clock, until her death in 1922. She was afraid to stop building because if she did, she would die.

Facts: There were often long breaks in the construction. For example, Winchester was known to dismiss the staff for periods of time so she could rest or because the season was not conducive to continued construction. Otherwise, she provided consistent employment to workers even during the economic

depression in the 1890s. During the San Fransisco earthquake of 1906, Llanada Villa was severely damaged. Construction was essentially stopped except for necessary repairs. She decided not to rebuild but instead focused successfully on continuing to manage her finances and grow her portfolio. Winchester had proven a savvy investor; by the time of the earthquake, she owned close to a dozen properties in the San Francisco area, including multiple rental properties and two homes in Atherton.

'Crazy' Construction

Fancy: There are stairs that lead to nowhere, and the reason for the stairs "is a riddle only known to Mrs. Winchester" (Roberts n.d., 6). There are doors that open to two-story drops. Some doors opened to solid walls. The maze-like construction was built to confuse the spirits that haunted her.

Facts: The maze-like construction is partly due to Winchester's initial inexperience as an architect and partly due to large, elaborate homes being common during the late 1800s. Since she had the resources to do so, she would often add a new wing in front of a door or window, blocking off their access, or would have rooms rebuilt if they were not to her liking. Remember, women were not permitted to attend schools for architecture, so she educated herself by subscribing to many architectural magazines, consulting with carpenters, and learning through trial and error. In the 1906 earthquake, the upper stories collapsed, causing doors to open to nothing and stairs to nowhere. This damage was cleared, and the resulting holes were boarded up for safety.

Stairs to nowhere with Christmas elves and presents on them (photo by Adrienne Hill)

Number Thirteen

Fancy: Winchester was obsessed with the number thirteen. Some examples in the house:

- thirteen bathrooms
- thirteen windows in one bathroom
- thirteen overflow holes in a wash basin
- thirteen steps on a staircase
- thirteen hooks in the séance room for thirteen colored robes
- thirteen candles on a chandelier that originally had twelve candles
- thirteen glass cupolas in the greenhouse
- thirteen palm trees lining the driveway

Facts: According to carpenter James Perkins, who worked on the property for many years, the features appearing in thirteens were additions to the home after Winchester had died. The first mention of the number thirteen in relation to Llanada Villa appeared in print in 1929, seven years after Winchester's death. The workmanship that Winchester expected for her home was exceptional. An imported German twelve-candle chandelier now showcases an additional, sloppily added thirteenth candle. If she truly wanted a chandelier with thirteen candles, she could have afforded and ordered a custom one. Additionally, while on the house tour, I noted many things that were not thirteen. While passing through a room before going into the so-called séance room, there were five hooks that were ignored. All but one of the many

Thirteen bathrooms and thirteen hooks (photos by Adrienne Hill)

Pump organ in the music room (photo by Adrienne Hill)

staircases we walked up or down had more (or fewer) than thirteen stairs. And one that was claimed to have thirteen stairs was really fourteen stairs—perhaps the fact that you had to turn a corner before going down the last step disqualified it from being counted. To quote fellow tour attendee Jane Selkie, "Both tours were based on a lot of making something out of nothing."

Visiting a Spiritualist Medium and Feeling Guilty

Fancy: Winchester was not a churchgoer, but after the loss of so many family members, she went to a Spiritualist medium (Adam Coons) in Boston who convinced her to build a house for the spirits of all the people killed by rifles made by the Winchester Arms Company. Winchester felt tremendous guilt over the deaths caused by the rifles.

Facts: Winchester's family were Baptist. When she moved to California, she was affiliated with the Episcopal church and, after 1908, St. Paul's parish in Burlingame. It is unlikely that Winchester felt any guilt about deaths from Winchester repeating rifles because weapons were not socially maligned at the time and were in fact considered necessary for survival. Extensive research has not revealed any evidence that a medium named Adam Coons worked in Boston at that time or evidence that Winchester ever visited a medium. The origin of the name "Adam Coons" can be traced back to a book written by Susy Smith in 1967 called *Prominent American Ghosts*. Winchester's reclusive behavior fueled local gossip and newspaper articles speculating about her "odd" behavior. She most likely kept to herself because of disfigurements from arthritis, missing teeth, and neuritis. Winchester's relatives and employees never made any claims of her superstitious nature. Miss Henrietta Servers, a close companion of Winchester, said that she never held superstitious beliefs.

Séances and Spirits in the House

Fancy: The bell tower was used to summon spirits, and ghostly music was often heard by neighbors during the night. She held, by herself, nightly séances in the blue room, or a closet, to speak to spirits who guided her regarding her construction project. She also held lavish parties for the ghosts in her home with food served on gold plates that were kept in her safe.

Facts: Winchester's staff stated she had no interest in séances, and records show that the blue room was in fact the gardener's bedroom. After her death and the safe was opened, no gold plates were found, only some mementos and a lock of her baby's hair. The bell tower was not used to summon spirits but instead to call workmen to their jobs, and it doubled as a fire alarm if necessary. Winchester often could not sleep and would play the pump organ in what the attraction's owners call the Grand Ballroom. This ballroom is small and was actually the music room. The house did have a ballroom prior to the 1906 earthquake, but it was destroyed and never rebuilt.

Most Haunted Place in the World

Fancy: The Winchester Mystery House is said to be the most haunted place in the United States and sometimes even in the world with over a thousand ghosts in residence. Visitors and tour guides have reported many ghostly oddities, including cold spots, odd sounds and smells, doors and windows slamming, and feelings of being watched.

Facts: All these ghostly signs have been explained by Joe Nickell and other investigators. Old houses often have large temperature variations within and between rooms. The unusual sounds are more likely to be from the wind, the structure settling, someone in a different room talking, or even just imagined because guests are primed for an unusual experience. On our Walk with Spirit Tour, our guide introduced us to a new concept called "residual spirits." You may have heard of this regarding the dead, who leave an imprint of themselves usually in the form of emotion. According to our guide, though, these residual spirits were something different. Living people could also imprint in this house. For example, other guides had heard or seen our guide in the house when he was not at work. Of course, all the spooky happenings that have been reported occurred and were discussed in the damaged and poorly lit areas of the house rather than in the restored, furnished, and nicely lit parts—classic psychological priming in action.

Conclusion

I hope you can now understand my deep frustration about the portrayal of this remarkable woman. Sallie Winchester was portrayed by journalists and those who did not know her as mad, superstitious, and guilt-ridden when the evidence suggests that she was a kind, rational, and savvy businesswoman. She broke stereotypical boundaries by being the designer and project manager for her beloved home. She managed her own finances. She did not seek the limelight, often donating to

The spooky room where we learned about the existence of "residual spirits" of living people (photo by Adrienne Hill)

causes anonymously, and she paid the price for it with rumors of eccentricity.

Even though this story began over 100 years ago, it is important to challenge these unfair stereotypes and untruths and to celebrate the real story that is more interesting than the fiction. In an Amazon book review of Ignoffo's *Captive of the Labyrinth*, this sentiment is illustrated beautifully: "Although my life-long illusion of who Mrs. Winchester was has been shattered [by your book], I am glad for it. I find her actual story far more inspiring and a cautionary tale in the effects of journalism and the intolerance of intelligent women that history had to rewrite her story to make her seem unstable" (Ignoffo 2022, xvi-xvii).

Winchester's life is a testament to strength in the face of much adversity, including the deaths of her daughter and husband, declining health, and unfair rumors and accusations. It is time to acknowledge and celebrate these accomplishments while eliminating the false narratives that have survived for far too long.

To underscore the significance of accurately depicting Sallie Winchester, consider the number of views that these two Wikipedia pages have received throughout the years. The Winchester Mystery House page, published on September 9, 2022, garnered 847,710 views, while the Sarah Winchester Page, published on November 16, 2023, accumulated 105,142 views. I like to envision visitors taking tours and subsequently consulting the Wikipedia pages to discover the history of this remarkable woman and her not-so-mysterious house. ■

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Adrienne Hill, a former high school mathematics teacher, currently dedicates her time to serving as a board member for the nonprofit organization About Time, founded by Susan Gerbic. Hill also actively contributes as an editor for Guerrilla Skepticism on Wikipedia, reports for *The Skeptic Zone* podcast, and cochairs the Western Canadian Reason Conference (WeCanReason), which is held in Calgary, Canada, at the beginning of May each year.

For more, view "**The Making of Skeptical Activist: A conversation with Adrienne Hill**"

(scan the QR code to view the video at skepticalinquirer.org)

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Mysterious Mastermind: Conspiracy Theories and Taylor Swift

DAVID HAHN

Editor's note: There are hidden Easter eggs in this article. See something that looks "wrong" typographically? It might be a clue. See if you can find them all.

This isn't an article about Taylor Swift specifically—at least, the point isn't to discuss her. This is an article about conspiracy theories and a musician in her prime. Love Taylor Swift or hate her, the conspiracy theories about her are important to understand from a cultural standpoint. It is vital to know why these theories were inevitable.

I'm using Taylor Swift as a proxy for a trend in conspiracy theorizing over the years. I'm concentrating on her for the same reason that conspiracy theorists do—she has become the most famous person in music. Full disclosure: I consider myself a fan. I like her tracks, I think she's a terrific lyricist, and for the inquisitive of "Swifties" reading this: my first album was *1989*.

In my day job, I teach a course at SUNY Geneseo titled "Conspiracy Theories, Skepticism, and Critical Thinking." I often simply listened to her music to escape the tedium of grading papers; then, in September 2023, she became my work. Teaching classes on conspiracy theories means I must live in conspiracists' world, and if they become obsessed with something, it entails that my research now

must focus on it.

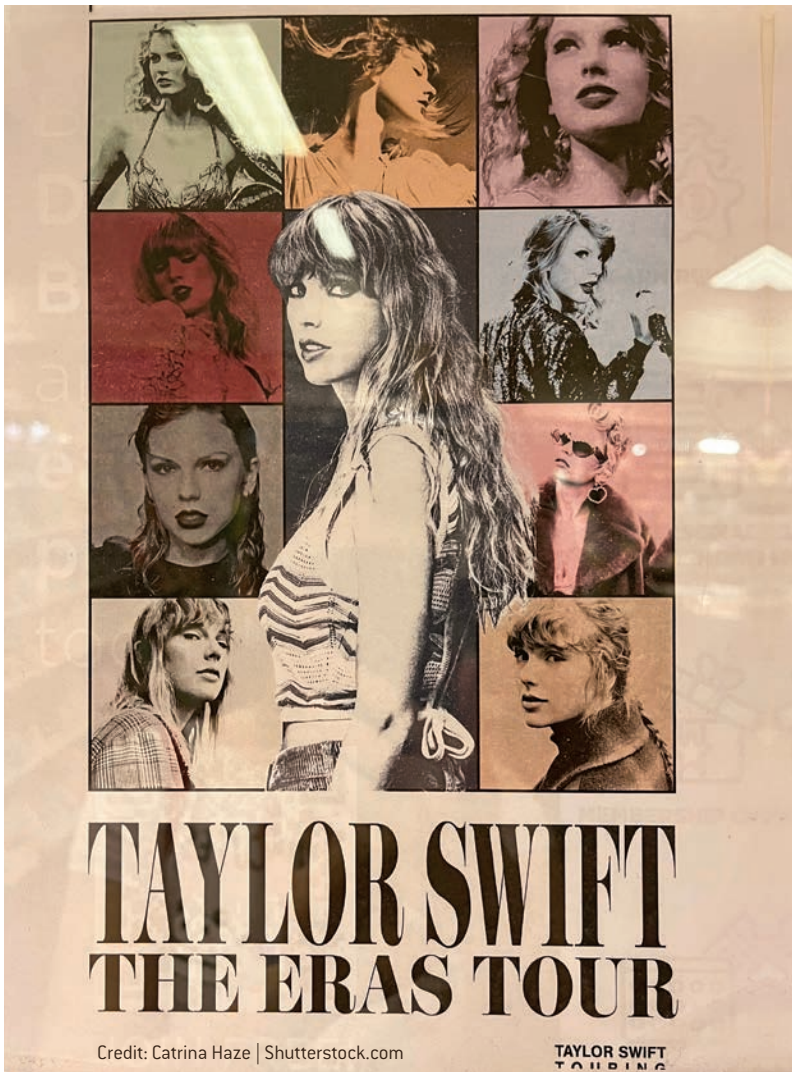
Anyone who achieves a certain level of fame is going to have conspiracy theories attached to them. The question was never *if* Taylor Swift would become a focus of conspiracy theorists but *when* and *in what manner.* She simply became too famous for conspiracy theorists to ignore. In 2022, she released a new album, *Midnights*, to universal acclaim. In March 2023, the Eras Tour began. This tour has earned over a billion dollars and is the highest earning concert tour in history (Millman 2023). In October 2023, she released a film version of the Eras Tour, which became the highest grossing concert movie of all time (Moreau and Lang 2023). This alone would be an achievement if it was not also accompanied by a re-recording and release of two previous studio albums, *Speak Now* and *1989*, in an attempt to reclaim ownership of her music. Let me stress that the Eras Tour is so popular that cities and countries were courting her for the economic impact that it brought. My own city of Buffalo, New York (also the location of the CFI headquarters), put up billboards begging her to come to Buffalo … that is until she started dating the tight end of the Buffalo Bills' rival football team, the Kansas City Chiefs. Normally, I shy away from celebrity gossip and romance, but this becomes important later.

Anyone or anything that is significant in our culture becomes fodder for conspiracy theories. While it seems odd that a singer can generate such attention, music is culturally important enough that we've been down this road many times before. The Satanic Panic of the 1980s and 1990s claimed the entire genre of heavy metal as a vehicle for brainwashing listeners. In the 1960s, it was everything that could be considered rock 'n' roll. It's new, it's different, and it represents the neophobic balderdash that Illuminati conspiracy theorists always offer against the younger generation (Johnson 1983).

Taylor SwiFt herself is a rather treacherous force in this. Her favorite number is thirteen, and superconspiracy theorists (i.e., Deep State and Illuminati theories) love using numerology to "prove" their claims. Her social media feeds are full of cryptic images and words that send her zealous fanbase hunting for clues to decipher a meaning. It's a very clever marketing technique because it keeps her fans both aware and engaged, but it also gives conspiracy theorists a way in. "See," they'll claim, "the purple door meant a new album, so the horns could mean Satanism."

Most people are familiar with her as the woman who sings about her famous break ups. While singing about heartbreak and unrequited love is part of her repertoire, calling her out for singing about her break-ups is ignoring the entire history of musIc. Swift also has songs about other subjects as well—from calling out a patriarchal society (in "If I Were a Man"), to an individual obsessed with hating others (in "You Need to Calm Down"), and just being a woman who owns her own fate (there's a bunch of these); her music covers a variety of topics and commentaries.

Conspiracy theories place her in the Illuminati. There she joins so many other people that the list of who *isn't* in the Illuminati is probably shorter than the list of who is in the fabled organization. There's nothing novel in claiming that Taylor Swift is in the IllumiNati. If you believe in this type of conspiracy theory—she must be. She's too famous, too rich, and too popular for that organization to let her exist outside it. Illuminati conspiracy theories like this always attach themselves to anyone who meets two conditions: they are popular, and they are women. I've already discussed the former. The latter is evidence of a latent misogyny that exists in the conspiracy theory world.



Taylor Swift is merely the latest in a series of musical stars that includes Beyonce, Britney Spears, Katy Perry, Lady Gaga, Madonna, Miley Cyrus, Rihanna, and Shakira. Each of those singers have two things in common: they were the most popular singers at one time, and they were all young, attractive women. It's probably not just a coinciDence that conspiracy theorists' new obsession is a beautiful woman who performs in skintight leotards. Just as it probably wasn't a coincidence that they examined Katy Perry's tight shirts for hidden messages or pointed out possible imagery in the background of a steamy Lady Gaga video.

However, there is still something different about these Taylor Swift conspiracy theories. Katy Perry is regarded as

Credit: s_bukley | Shutterstock.com

a traitor to conspiracy theorists because her original stage persona, Kate Hudson, was in the genre of Christian Rock—which she quickly abandoned. Lady Gaga earned their attention during her Born This Way tour as she publicly advocated for marriage equality. In contrast, Taylor Swift's support for LGBTQI+ individuals is no longer *that* controversial in mainstream society. Culturally, there is soMething strange about these theories.

The claims about Taylor Swift are strange because they are saying that she is nonsensically a "Pentagon Psy-Op" (psychological operation). The basis for this accusation is provided by cable news host Jesse Waters, who played a video from a 2019 conference of the NATO Cooperative Cyber Defense Center, which he claimed floated the idea of turning Taylor Swift into an "asset." Waters does not give any context for the claim because when pushing a conspiracy theOry, context is usually your enemy. The context of the claim (which is kind of true) is that the presenter, Alicia Marie Bargar, is explaining the concept of an "online influencer" to a room full of people likely unfamiliar with the concept. Barger is using Taylor Swift as an example of the concept when she says, "You came in here wanting to understand how you just go out and counter the information operation. The idea is that social influence can help encourage or promote behavior change … So, potentially as like a peaceful information operation … I include Taylor Swift in here because she's—she's, you know, a fairly influential online person" (Power 2024).

The NATO meeting is just using her as an example of an influential person, not saying "recruit this woman." It's telling that Waters has to go back five years for this snippet and then is forced to admit that he's got no hard evidence. The point was never to provide evidence; it was to send out this conspiracy theory with the most gossamer of support, because once it's out there it cannot come back. The most important part of the conspiracy theory is not what was being said but where it was being said. It wasn't claimed on some stRange corner of the internet or buried underneath the bots on Twitter. Jesse Waters is a Fox News host, and Fox News has the highest viewership of the twenty-four-hour American news channels. It was repeated across the conservative conspiracy sphere. Former Justice Department Official and indicted January 6 conspirator Jeff Clark tweeted on January 9: "Taylor Swift is a Trojan Horse." An ominous—but ultimately meaningless—sentence.

In studying conspiracy theories, I have come to an understanding that most of their claims and worldview is informed by fiction rather than fact. Conspiracy theorist David Icke believes that we are all living in a computer simulation—a theory he developed shortly after the 1999 hit movie *The Matrix* and the lesser known 1999 movie *The 13th Floor* came

out. Here the idea of a "Psy-Op" is supposed to evoke a hypnotic mind control effect like in the 1962 movie *The Manchurian Candidate* (or its 2004 remake) or perhaps subliminal control like in the 1988 movie *They Live*. It's very doubtful that someone like Waters is hoping to evoke a reference to actual psychological operations, which are information sharing and propaganda efforts. Instead, he wants us to think that the singer of "Treacherous" and "The Tortured Poets Department" is somehow … doing something. It's unclear what he thinks the psychological opEration is supposed to accomplish.

Both Vivek Ramaswamy and Mike Crispi made the public claims that the 2024 SupEr Bowl was going to result in a coronation of Joe Biden by both Taylor Swift and her boyfriend, Kansas City Chiefs' player, Travis Kelce. Ramaswamy, it should be noted, made his claim while he was still campaigning for the GOP nomination to run against Biden in the presidential election.

What the Taylor Swift conspiracy theorists all share is a fear that she's going to endorse Joe Biden for president and thus direct her considerable fan base toward voting for him. This fear isn't unfounded; a simple messaGe from her about the importance of voting caused a spike in voter registrations (Sullivan 2023). In 2020, she supported Biden because in her view Americans have a right to live free of being threatened because of their race, gender, sexual identity, or anything similar (Bailey 2020). (Note: this article was written before Joe Biden endorsed Kamala Harris for president.)

Claiming that her popularity is "not orGanic" means that her sold-out stadium tour, her record-breaking albums, and her long career are not the result of her effort and talent. Her fans do not exist. The fact that she has more platinum singles than any other fem*al*e artist is all some kind of illusion. Conspiracy theories are not about the thing that they claim to be about. The "facts" of a conspiracy theory are rarely about their topic. Mostly, conspiracy theories are about feelings. Illuminati conspiracy theories are about the change in social mores and culture; this is the theme of the 1798 book *Proofs of a Conspiracy* by Scottish scientist John Robison, and nothing aside from the writing quality has changed. The Taylor Swift conspiracy theories are not about her; they are about a pop-culture phenomenon that is not on the same side as the conspiracy theorists. As Christian Paz writes for Vox explaining the phenomenon that these theorists are "communicating an emotion—not that Taylor Swift is literally an agent of the Deep State, but that she is a stand-in for a worldview suspicious of American politics" (Paz 2024).

Creating theories about Taylor Swift is also about drawing attention to the theorists themselves. Several conspiracy theorists are so obscure that the brief attention they enjoy by offering these theories is the most attention their online presence will ever receive. These theories send a message that because something is new, alien, and counter to their worldview, that it's the product of a conspiracy. It shields believers from having to realize that they may have to change their view. The conSpiracy theories allow them to believe that if their worldview is failing, it is not because it's wrong but because people like Taylor Swift are making it fail. ■

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For more, read "Decoding Taylor Swift Conspiracies and Outrage" by Benjamin Radford

(scan the QR code to read the article at centerforinquiry.org)

Dark Turn in a Thrift Store Urn: A Serial Killer's Ashes?

KENNY BIDDLE

In my years of investigating extraordinary claims of alleged paranormal activity, I've come across my share of hoaxes. From the Dibbuk Box (Biddle 2019) to spirits moving a table (Biddle 2022) to a dancing Cabbage Patch doll (Biddle 2021), I've seen people try to pass off all manner of deception to gain fame, fortune, or just a few minutes in the spotlight.

The urn the author found at a thrift store. Originally it was sealed up with masking tape, which the author removed. He then discovered the inscription on the bottom.

Attention is a powerful motivator, and some people just can't help themselves. While I have exposed many hoaxes, I may have also stopped one before it had a chance to take off.

In summer 2021, I walked into a local thrift shop in my hometown of Philadelphia. I was "treasure hunting"—visiting stores, yard sales, and flea markets searching for strange objects and oddities. This has been, and still is, a weekend routine that I enjoy (and it's also helped grow my vintage camera collection). I wasn't looking for anything in particular; I was just on the lookout for anything unusual (besides me).

As I walked up and down the aisles, scanning shelves packed full of discarded and well-used items, my eyes came to rest on a brass urn. I stopped dead (pardon the pun) in the middle of the aisle, causing an elderly woman to bump into me with her cart. Over the years, I've seen old trophies, certificates/diplomas, and even a nineteenth-century marriage license on these shelves. It's kind of sad to see someone's achievements and life mementos dropped off at a thrift store, forgotten by one's family. But I honestly never expected to see an urn tossed away.

I picked up the urn and began inspecting it, looking for some markings that might give me a clue as to who was in it. Someone had used packing tape to secure the lid, so I wasn't sure if anyone was still inside (I really hoped it was empty). The whole piece, including the lid, stood about nine-and-a-half inches tall. Although the outside had no dents, the surface had seen better days. There were no markings around the sides, but on the underside, which was out-of-sight when displayed, was some writing etched into the metal.

I didn't have my (reading) glasses with me, so I couldn't read it (getting old sucks). The packing tape also obscured a decent view—and I wasn't about to remove the tape and possibly spill out the contents in the store. I was still intrigued, thinking I might find the family and return it to them in the event the urn had been discarded by mistake. I paid the sticker price of $2 and placed it with the rest of the treasures I found that day.

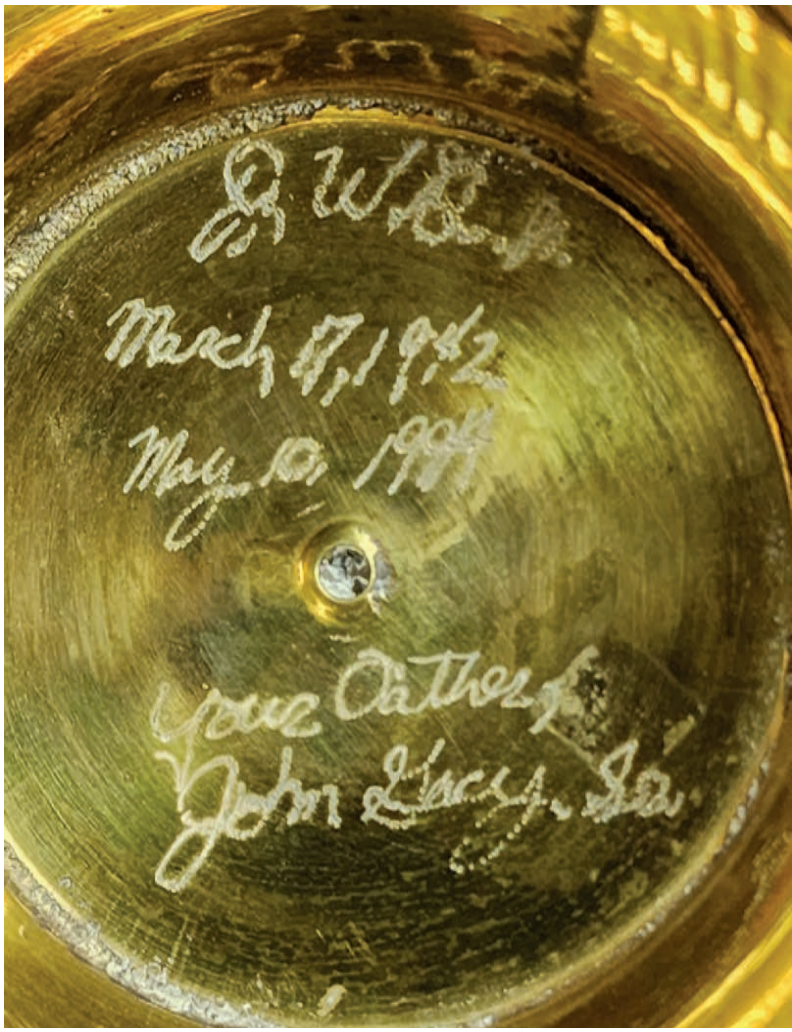
The Urn of a Serial Killer?

When I got home later that afternoon, I unpacked my bags of newfound treasures and began cleaning them. After removing the packing tape and putting my glasses on, I could finally read the inscription on the urn:

J.W.G. Jr
March 17, 1942
May 10, 1994
Your Father,
John Gacy Sr

I read it again—then once more. My first thought was, "No. This can *not* be real." The inscription makes it sound like this urn contains the ashes of John Wayne Gacy (J.W.G.), the American serial killer and sex offender who raped, tortured, and murdered at least thirty-three young men and boys between 1968 and 1978.

I do not engage in the dark and macabre hobby of collecting "murderabilia," things such as "articles of clothing, personal possessions, and locks of hair belonging to murderers" (Yuko 2019). It's just not my thing, and I have no interest in starting such a collection. And, to be honest, I was not happy about what I was holding in my hands, even if it was a fake—which I assumed it was. Personally, I think such people need to be erased from history, not looked at like some kind of twisted celebrity. I didn't know what I had, so I shifted into investigation mode and took a closer look at the few details available to me.



The inscription on the bottom of the urn

A Closer Look at the Inscription

A curious detail that stood out to me was the use of the suffixes *Sr.* and *Jr.* I'm well familiar with their use, given that I happen to be a junior. The inscription clearly uses the suffixes *Sr.* and *Jr.* when referring to John Gacy the father and John Gacy the son. The problem here is these suffixes are formally used when a father and son have the *exact* same name (Emily Post Etiquette n.d.). In this case, the father's full name is John *Stanley* Gacy, while his son's full name was (obviously) John *Wayne* Gacy. The father and son would not need to be differ-

STATE OF ILLINOIS

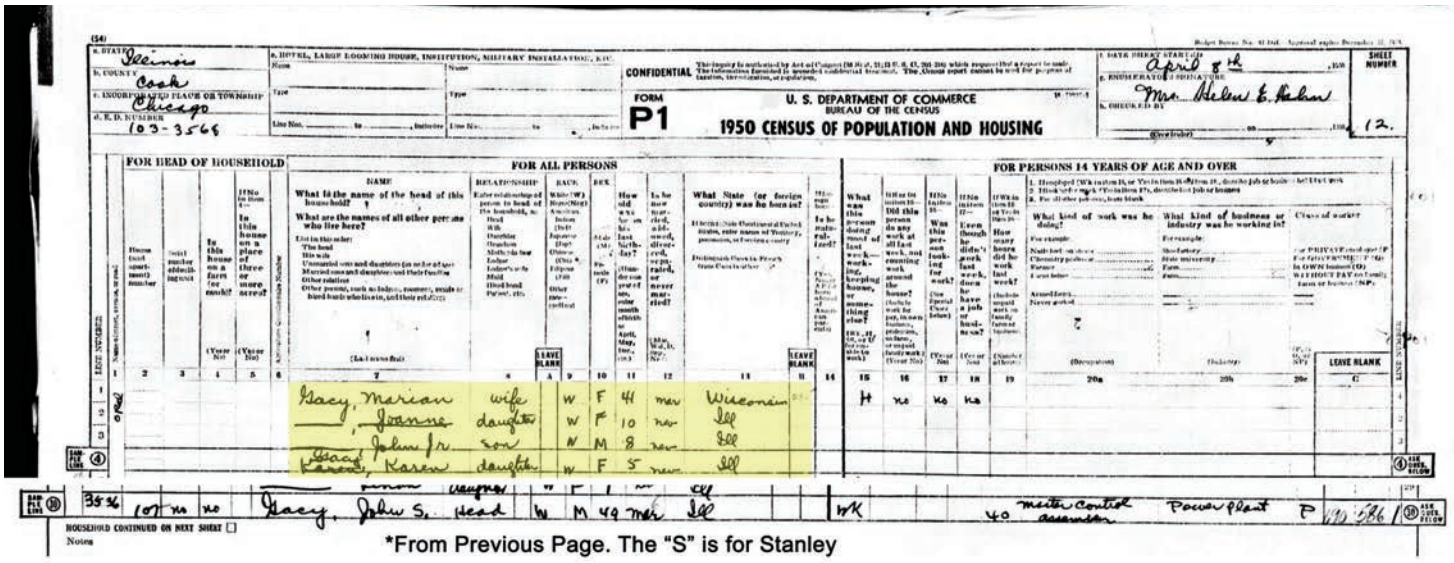
REGISTRATION DISTRICT NO. 99.0
REGISTERED NUMBER 001004

MEDICAL EXAMINER'S – CORONER'S CERTIFICATE OF DEATH

STATE FILE NUMBER 139771

1. DECEASED–NAME FIRST	MIDDLE	LAST	2. SEX	3. DATE OF DEATH (MONTH, DAY, YEAR)	
JOHN	WAYNE	GACY	MALE	MAY 10, 1994	
4. COUNTY OF DEATH	5a. AGE–LAST BIRTHDAY (YRS)	5b. UNDER 1 YEAR MOS / DAYS	5c. UNDER 1 DAY HOURS / MIN	5d. DATE OF BIRTH (MONTH, DAY, YEAR)	
WILL	52			MARCH 17, 1942	
6a. CITY, TOWN, TWP, OR ROAD DISTRICT NUMBER	6b. HOSPITAL OR OTHER INSTITUTION–NAME (IF NOT IN EITHER, GIVE STREET AND NUMBER)			6c. IF HOSP, OR INST, INDICATE D O A OP EMER, RM, INPATIENT (SPECIFY)	
LOCKPORT TOWNSHIP	STATEVILLE CORRECTIONAL CENTER			--------	
7. BIRTHPLACE (CITY AND STATE OR FOREIGN COUNTRY)	8a. MARRIED, NEVER MARRIED, WIDOWED, DIVORCED (SPECIFY)	8b. NAME OF SURVIVING SPOUSE (MAIDEN NAME, IF WIFE)		9. WAS DECEASED EVER IN U S ARMED FORCES? (YES NO)	
CHICAGO, ILLINOIS	DIVORCED	--------		NO	
10. SOCIAL SECURITY NUMBER	11a. USUAL OCCUPATION	11b. KIND OF BUSINESS OR INDUSTRY	12. EDUCATION (SPECIFY ONLY HIGHEST GRADE COMPLETED) Elementary Secondary (0-12)	College (1-4 or 5 +)	
344-34-3840	CONTRACTOR	OWN BUSINESS	12	5+	
13a. RESIDENCE (STREET AND NUMBER)	13b. CITY, TOWN, OR ROAD DISTRICT NO.	13c. INSIDE CITY (YES/NO)	13d. COUNTY		
KASKASKIA STREET	MENARD	YES	RANDOLPH		
13e. STATE	13f. ZIP CODE	14a. RACE (WHITE, BLACK, AMERICAN INDIAN, etc.) (SPECIFY)	14b. OF HISPANIC ORIGIN? (SPECIFY NO OR YES–IF YES, SPECIFY CUBAN, MEXICAN, PUERTO RICAN, etc.)		
ILLINOIS	62259	WHITE	XX NO [ ] YES SPECIFY:		
15. FATHER–NAME FIRST	MIDDLE	LAST	16. MOTHER–NAME FIRST	MIDDLE	LAST
JOHN	STANLEY	GACY	MARION	ROBERTSON	SCOW

The death certificate for John Wayne Gacy


FORM P1
U. S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
1950 CENSUS OF POPULATION AND HOUSING
CONFIDENTIAL
FOR HEAD OF HOUSEHOLD
FOR ALL PERSONS
FOR PERSONS 14 YEARS OF AGE AND OVER
Illinois
Cook
Chicago
103-3568
Mrs. Helen E. Hahn
April 8th
12.
Gacy, Marian wife W F 41 mar Wisconsin
Joanne daughter W F 10 nar Ill
John Jr. son W M 8 nar Ill
Karen daughter W F 5 nar Ill
Gacy, John S. Head W M 49 Mar Ill
HOUSEHOLD CONTINUED ON NEXT SHEET
*From Previous Page. The "S" is for Stanley

The 1950 census gives evidence that John Wayne Gacy was referred to as a junior.

entiated from each other using these suffixes. In contrast, my father and I share the same exact name—first, middle, and last—making me a junior.

Just to be sure there wasn't a name change I wasn't aware of, I searched for official records that would display his full legal name. This included a Cook County (Illinois) search warrant, a Cook County Indictment, his Order of Sentence (to death), and his Death Certificate. None of these documents included a Jr. with his name, telling me the suffix was not in fact part of his legal name.

However, after a bit more document digging, I did come across references to John Wayne Gacy being referred to as a junior. In the March 12, 2021, edition of *The Chicago Tribune*, a section of the paper looks back at events that happened on that date in the past. The "On March 12" section references the 1980 Chicago jury that found John Wayne Gacy guilty of thirty-three murders. The blurb adds "Jr." to Gacy's name. Another significant example comes from the 1950 U.S. Federal Census, which lists the Gacy family: John S. (head), Marian (wife), Joanne (daughter), Karen (daughter), and John as "John Gacy Jr." (son).

Admittedly, I thought the use of the suffixes would negate the possibility this urn was connected to John Wayne Gacy. The 1950 census casts doubt on this because it clearly shows the younger John had been referred to as Jr., at least according to one official record. Because the inscription was engraved by an amateur hand, one might argue that it was done by a family member for the father, perhaps to remember his son. That leads us to the next issue.

The beginning of the inscription has "J.W.G. Jr.," which, by itself, could be the initials for any number of individuals. After all, it doesn't actually spell out John Wayne Gacy's full name; they are just the initials. What stands out and points directly to the serial killer are the birth/death dates; John Wayne Gacy was born on March 17, 1942, and died by execution on May 10, 1994, at the Stateville Correctional Center. This matches what is engraved on the urn. Could these initials still belong to someone else? Sure, it's possible, but I seriously doubt it. With the father's name spelled out rather than just initials, along with the matching birth/death dates, there is little doubt who the inscription is meant to be. Also, an Ancestry search turned up no other matches for this data.

The inscription goes on to state, "Your Father, John Gacy Sr.," which gives the impression that his father had signed it, like signing the end of a letter. To me, it appears as if it was written by JWG's father, John Stanley Gacy. However, John Wayne Gacy's father passed away on December 25, 1969, which is just under twenty-five years prior to his son's execution.

It's obvious this urn was not engraved by the father, nor was it ever owned by him because he no longer existed when his son was executed. In addition, I can think of no reason to inscribe the father's name on the urn at all. Based on the available data, I'm confident that this object is most likely a forgery.

Why Would Someone Do This?

According to Find-A-Grave, John Wayne Gacy's body was "Cremated, Ashes given to family or friend" (Find a Grave n.d.). This statement is repeated by numerous websites and blogs that cover the life of John Wayne Gacy and his murders. Basically, nobody has any idea what became of his ashes. I can only hope they were dumped in the garbage soon after they were received.

According to an article on the All That's Interesting website, "To date, not much else is known about John Wayne Gacy's children. They've never spoken publicly about their father, given interviews, or written books" (Fraga 2022). I don't blame them at all. If that guy was my father, I would do everything in my power to distance myself as far away as possible from the family name.

Once I was satisfied this urn was a forgery, I began to won-

der why someone would go to the trouble of making a fake serial killer's urn and how it ended up on a thrift store shelf. Perhaps this was a crude attempt at creating a viral internet hoax. Was it part of a scam to make some quick cash off some gullible enthusiast?

I reached out to Stuart Vyse, behavioral psychologist, author, and previous interim editor of Skeptical Inquirer, to ask for his thoughts on why someone might create this object. During our conversation, he leaned toward possible financial motives: "A lot of pseudoscience that we know about is to make money. It has a commercial or financial aspect to it."

Vyse continued:

> One possibility, down the line, someone was sold this online as if it were a genuine object … online, or in an auction, or in a store … and it was actually advertised as such (an urn containing JWG's ashes). If we assume there was one other iteration of sale before you, there only needs to be one, then the person who etched it simply had a financial motive. And then at some point, I would imagine the buyer may have become wise to the fact that they were hoodwinked and ended up just giving it away (which is how it ended up in a thrift shop). So, that does slightly resurrect the financial motive, which I think is hard to deny.

Vyse offered another scenario:

> Let's say that we go back, and the hypothesis is that somebody did this, lied, created a fake object to make money on it. Might it have had ashes in it at one point? So they were selling not only the urn, but … part of … somebody. For the weird kind of person that might want to buy it [the urn], that [the ashes] would increase the price, and we're just speculating, that's one scenario.

Vyse added:

> The other possibility is simply that a person had it and wanted it to be a conversation piece. And what do they get out of it? They get attention. I think that's why people do most things. It's simply the idea, "Look how cool this is; I have this thing." Other than false advertising and the regular commercial marketplace, I don't think you have to be mentally ill in any way to do this kind of thing. I think it's just that "people do it" and it's entirely for attention. And they're willing to not be honest to get that attention.

I also brought up the idea of a social media stunt. It's not unheard of for someone to post a photo or video for the attention that specifically comes with social media—likes, views, shares, and comments. Vyse commented:

> The problem with social media, of course, is that it is a bit self-correcting. I mean, the minute the person were to post this on the internet, some guy like Kenny is going to come along and say, "Hey, wait a second, I happened to look at the Wikipedia page and this can't be true." That is the problem with this particular item; the minute you posted it on Twitter or Instagram, someone is going to point out the obvious errors. But at a dinner party or just having drinks with somebody, in those settings people are not as rigorous (unless they whip out their phones). They're willing to ride the wave of excitement ("Wow, that's cool").

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In closing, this small urn may or may not have once contained the cremains of an unknown person, but I'm confident it was not the serial killer whose name is engraved on the bottom. I can only speculate that its presence in a thrift shop was the result of buyer's remorse (or embarrassment) after realizing it was a fake, or that this was meant to cause a viral sensation by a naive murderabilia enthusiast who saw their opportunity for the "virtual spotlight" rather than the subtle hints of a forgery.

The interior of the urn shows that it might at one time have contained cremains, but they almost certainly were not John Wayne Gacy's.

Or it may have been a prank to see whether a thrift store shopper would take the bait and take to social media announcing the amazing (if grisly) find. Instead, the urn was picked up by a skeptic with an interest in odd objects and solving mysteries. Thus ended its reign of social media terror before it began. ■

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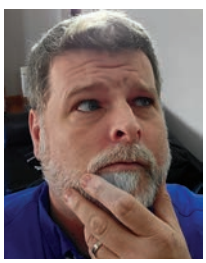

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Is Belief in Improbable Theories Ever Warranted? A Fortune Teller's Own Death Card

LEE MCINTYRE

For years, I have been fascinated by the irrationality of science denial. When people typically engage in science denial, the problem is not simply that they deny well-tested empirical theories for which there is ample evidence but that they also usually subscribe to an alternative belief for which there is little to no evidence. Of course in science one cannot prove a theory is true no matter how good its evidence; unlike Euclidian geometry or deductive logic, science is about probability, not certainty. This sometimes provides a tiny crack of hope to a denier who will somehow jump to the conclusion that due to the absence of certainty, their own theory might be just as good as a scientific one. They think it *could* still be true,[1] which means that they feel justified in their denial.

This of course violates several norms of good empirical reasoning, which I have explored at greater length in my book *The Scientific Attitude*. The scientific attitude, I argue, is the founding ethos of science, whereby scientists as a community subscribe to the creed that (1) evidence matters, and (2) if the evidence changes, then one's beliefs should change accordingly. The bottom line here is to recognize that even if all science can do is assess the power of one's justification for believing a theory based on its evidence—understanding the context of fallibilism that surrounds all empirical belief—a well-warranted theory is still worthy of belief even if future evidence may cause us to revise it. As we know from David Hume, inductive reasoning falls short of certainty. Despite this, the scientific attitude supports the idea that we are justified in believing the better warranted theory, which is to say that choosing to believe a theory that has *less* warrant over one that has *more* warrant seems deeply irrational—even if

1. Unfortunately, they miss completely the idea that if their theory has been disproven, they should give it up.

neither can be proven.

I began to think about all this more deeply during a recent trip to Rome while walking in one of the most beautiful places in the world: the Piazza Navona. There I saw several fortune tellers and heard the story of one who had allegedly predicted his own death. In the story, Maga Mago was a Tarot card reader of some great reputation. One day he encountered an old friend from America. Mago told his friend that he wanted to give him all his money, because Mago had foreseen his own death. It seems that Mago had pulled the "death card"—number 13—from his Tarot deck five times in a row, which out of a deck of seventy-eight cards seems incredibly improbable. In the face of this, Mago was sure he was going to die, which he indeed did a few weeks later (Carbone 2022).

This got my attention. Of course, there is no relationship between pulling the death card in a Tarot deck and dying soon after. Tarot cards are not biopsies, and there is no discernible causal relationship between them and life events. Moreover, over 150,000 people die in the world every day—no matter their predictive abilities—so predicting that an elderly man will die within the next two weeks is not a foolish bet.

But then I thought of how things might look from Mago's point of view. Suppose that he actually believed in his own ability to foretell the future. His friend (who is a physician) reported that when he saw Mago, he seemed genuinely depressed and finally blurted out, "Look at me. I am dead!" And so I began to wonder: From Mago's perspective, would it be rational for him to believe that he was going to die?

That is not a foolish question.

In my conversations with science deniers, I often ask them what evidence they have for their own beliefs or, better still, what evidence might convince them to change their minds. This latter question, drawn from Karl Popper, forms the core idea behind the scientific attitude: one's beliefs need to be held accountable to evidence. So then the question formed in my mind: Was I embracing the scientific attitude? If someone had asked me "What would it take for you to believe that Tarot cards have actual predictive ability?" and I had said, "Well, if you pulled the death card five times in a row, and then died, that would seem pretty improbable," would I then be rational to change my mind and give up my skepticism about fortune-telling? And what about poor Mago? Assuming that this wasn't a scam and he genuinely did what he said he did, and believed it, can I really say that his beliefs—which were informed by empirical evidence—were irrational?

The probabilities here are instructive.

Because a Tarot deck has seventy-eight cards, the probability of pulling card number 13 is about 1.28 percent. But the probability of pulling the death card five times in a row is 0.35 out of a billion, which is about the same likelihood as flipping thirty-one heads in a row on a fair coin.[2]

Seems unlikely, doesn't it?

In the face of such evidence, one wonders whether warranted belief in such a case might actually be justified. But belief in *what*? If I flipped a coin heads thirty-one times in a row, I might be well warranted in my belief that this was *not* a fair coin. That seems justified. But if I somehow had ancillary evidence that this was indeed a fair coin, what should be the content of my belief that the improbable series of coin flips was allegedly testing?[3] That I should buy dinner? That God exists? That I'll die in two weeks?

But what is the underlying correlation?

And it's the same for Tarot cards.

Consider the question of why one would believe that pulling the death card (no matter how many times) was correlated with one's imminent death. If I'd never seen a Tarot card deck before and made the prediction "I'll bet I can't pull the death card five times in a row" and then I *did*, that is a pretty compelling piece of evidence that I was wrong to think that this was so improbable. But what if my prediction had been "*If* I pull the death card five times in a row, *then* my own death is imminent." How are those two events supposed to be connected? There seems to be a distinction here between the improbability of pulling five death cards in a row versus the probability that *if* I do so, my own death is foretold.

To see this, consider some alternative predictions.

What if my prediction had been "If I pull five death cards in a row then *someone* in Piazza Navona tonight will die within the next two weeks." Given that perhaps 10,000 people visit the Piazza Navona every day, the chances of that might actually be pretty good. But what if your prediction had been "If I pull five death cards in a row, then the members of the royal family of England are actually lizard people," and you then pull five death cards in a row? Does that actually make your theory about the lizard people any more worthy of belief? Why would it?

The prior probability of the predicted event must be considered separately from the probability of the test that is used to predict it. This is to say that one must consider the underlying base rate of the predicted event. What is the likelihood that at least one person out of 10,000 will die within the next two weeks? Given that one person out of 30,000 dies every day, it is 99.06 percent. What is the likelihood that the members of the royal family are lizard people? This seems incalculable without some way of measuring any underlying correlation between the test that is used to predict this and its actual existence in reality, which is to say that when Mago pulled five death cards in a row he was *not* justified in connecting that to the likelihood of his own impending death, because there is no independent evidence that links dying with pulling a death card in Tarot.

And of course one must also consider the likelihood of fraud. Did someone mess with Mago's deck of cards? That seems much more likely than that he pulled five death cards in

2. I am grateful to Louis Kuchnir and John Paulos for helping me to think about this comparison.

3. This may seem unlikely because the test for whether a coin is fair is whether it acts fair. Nonetheless, one understands that in the world of fair coins, it is possible—though rare—for one to flip thirty-one heads in a row.

SPADE - SWORDS - SCHWERTER - ESPADA
CAVALIERE DI BASTONI - KNIGHT OF WANDS - RITTER DER STABE - CABALLO DE BASTOS - CHEVALIER DE BATONS
BUBE DER SCHWERTER - SOTA DE ESPADAS - VALET D'EPEES

a row at random. Or might Mago have been a liar? Maybe he knew he was going to die and wanted to go out with his reputation as a fortune teller intact. Upon further investigation, one learns that the cause of Mago's death seems to have been murder, which makes it less likely that he could have had any control over when it happened. But one might also wonder whether he might have been murdered within the context of owing a debt. Was he threatened beforehand and told to keep quiet? Or was it simply possible that Mago had no such intrigue surrounding his life until the moment he pulled five death cards in a row and then tried to give away his fortune? Was it possible that—upon predicting his own death—Mago achieved that rare feat of a "reflexive prediction," where the prediction itself affects the outcome? One imagines that an old man trying to give away his fortune might within a two-week window be unlucky enough to find a violent stranger who would be happy to take it from him.

Thus perhaps it's wrong to conclude that Mago pulling five death cards in a row (and then actually dying) is solid justification for the theory that Tarot cards are an accurate way to foretell the future. Instead, it perhaps makes more sense to conclude Mago was a fraud and a liar or that there might have been something fishy about the circumstances of his death.

Fair enough, but what if none of that was true? What if no one messed with Mago's deck, he was not just making up a story, and the person who murdered him had never heard of Mago's fortune or his prediction?[4] Discounting the actual death that followed, in the world we live in it is entirely possible that one could pull five death cards in a row from a random, well-ordered Tarot deck. In fact, if the sample were large enough, one might expect it.

Consider again the 0.35 out of a billion odds.

Suppose that in the year Mago died, the world's population was three billion people.[5] Now let's expand the size of the experiment beyond Mago, beyond Piazza Navona, beyond Italy, and give a deck of Tarot cards to every single human being on the planet for just five minutes on the night Mago achieved his rare feat. Now ask each person to pull a random card from their Tarot deck. If they pull the death card, keep going. After five iterations, exactly *one* of them will have done it.

And that night it was Mago.

Now consider again the 150,000 people who die on Earth on any given day. Absent any other information about their age, health status, etc., what is the chance that the one person on Earth who pulled those five Tarot cards in a row would be one of the ones to die that day? It is small but not zero.[6] Consider too the vague nature of the prediction. Mago had predicted that he would die, but he didn't say *when*. Need he have died that very day for his prediction to be fulfilled? Was two weeks a short enough time window to vindicate him? Now the odds improve. Given the finitude of human life—the fact that every one of us will die on *some* day on the calen-

4. The person who tells Mago's story on LinkedIn shares that the police said that no money was taken. But how reliable is that testimony? Indeed, how reliable is any of the testimony? Mago's story comes to us secondhand from sources who might have their own motives to lie or embellish. This, of course, would affect the probabilities at stake. Even so, I wish to proceed *as if* the story were credible as a thought experiment to test the appropriate conclusions one might draw if the reported facts were accurate.

5. I understand that in 1992, the world's population was actually 5.47 billion, but since this is a thought experiment I've chosen three billion to make the mathematical comparison a little easier.

6. It is, in fact, the same probability as for those who did *not* pull the death card.

dar but we just don't know which one yet—you could indeed make it an iron clad correlation that pulling five tarot cards in a row is *always* followed by death. This could be achieved either by saying, "If you pull a death card in Tarot then someday you will die," which is of course true. Or it could be achieved if every person on Earth did Mago's Tarot card experiment every single day, in which case there would be a perfect correlation between everyone who had pulled five death cards in a single day and then died that day.[7]

Of course, many more people would die than the roughly one each day who pulled the five death Tarot cards, but eventually that person would be right. (This reminds me of my favorite statistics joke: "All I'm saying is that everyone I've ever met who has confused causation with correlation has died.")

So, the question seems settled, and we skeptics can go back to feeling smug. Because absent prior evidence of some causal relationship between pulling a death card in Tarot and actually dying, the fact that Mago pulled five of them in one night and then died two weeks later means nothing.

Yet now the impish question: Exactly how does one assess causal relationships outside correlation? If Mago had pulled the same trick every night for a year, would he have been justified in predicting his own death? How good does the evidence have to be before you are justified in changing your mind to believe in what would have seemed *a priori* to be an improbable event? This is a question not just for people denying science but, dare I say, also for skeptics.[8]

What if Mago had predicted his own death to the minute? To the second?

Would he then be justified?

Would you?

If not, what evidence might be good enough to convince *you* to change your own mind about fortune-telling? About telepathy? About homeopathy? As rational skeptics, we need to think about this and, even better, set the conditions in advance. This is what the scientific attitude requires.

Yet even so, I cannot help but revisit the situation from Mago's point of view. From his position, wasn't any reasonable expectation of overcoming one's skepticism by evidence fulfilled? It's one thing to say that improbable events can happen. It's another to have them happen to you! And if enough of them happened—as they happened to Mago—wouldn't you be justified to change your mind? Maybe not. But if not, then when?

If the same improbable thing kept happening over and over again *to you*, would you feel satisfied merely to keep mentally expanding the size of the denominator of people in your universe until you had "explained away" the event as one that was "improbable but not unreasonably expected"? At what point would such mental gymnastics violate the scientific attitude?

And could you ever shake the feeling that things were not quite right?[9]

Years ago, on my first visit to Westminster Abbey, my wife and I admired all the monuments to scientists. What a lovely idea to have a cathedral that honors so many of those who practiced science and not just religious figures.

From a distance I could see that upon the nave there were two huge blocks of white marble. Given the relative size of the monuments we'd already seen—which seemed to correlate with the level of achievement of the scientists they honored—we questioned who those could be. We couldn't tell from a distance. One of them I was sure must be Isaac Newton, because we hadn't seen a monument for him yet.

"So then who's the other one?" my wife asked.

We'd already seen the monuments for Darwin and Galileo, for Faraday, Rutherford, and Maxwell. But we'd also seen them for many other figures beyond science: in art, in literature, in politics.

So I said, "Oh, hell, I don't know. Probably the third Earl of Stanhope or something." So we walked over to see.

And in the marble, it said, "Stanhope."

Was this a coincidence? A lucky guess? A bug buried deep in my memory of common English surnames? Surely it was.

But nonetheless, I'm never going back to Westminster Abbey. ■

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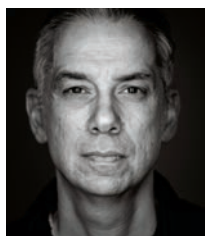

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7. Of course, most people who died would not have pulled the five Tarot cards that day.

8. In fact, one might wonder whether the evidence provided by Mago's original prediction is not already good enough to change one's beliefs. Start by considering some rational prior beliefs between {Tarot is real, Tarot is not real}. Say your prior beliefs are 0.00000001 percent to the former, 99.99999999 percent to the latter. That is, you're almost entirely sure Tarot is bogus; you only give it the tiniest speck of credence, just a millionth of a percent. But you give it something. You would also have to make some assumptions about how accurate Tarot is if it is real. To make it easy, let's just say if Tarot is real, it's 100 percent accurate; that is, a person who's going to die will always draw the death card. Now say the death card is drawn five times, and Mago dies. The Bayesian updated belief that Tarot is real becomes .00000001*1^5 / (.00000001*1^5 + .99999999*(1/78)^5). And as it turns out, that is 96.7 percent! Because you started with just the tiniest shred of belief that Tarot might be real, as a rational Bayesian you must now look at this "evidence" and become a 96.7 percent believer! (Of course, that's assuming you also give 100 percent to the belief that the cards were not gimmicked, forced, or tampered with and were fairly drawn—perhaps an invalid assumption in real life.) I am indebted to Matt Cook for helping me to work out the implications of this point of view.

9. This is not a ridiculous consideration. Consider the Appendix to David Hume's *Treatise*, where he says, roughly, "These thoughts make sense to me in the study but not at the gaming table." Is feeling a part of belief?

Eye Movement Therapies, Purple Hats, and the Sagan Standard

GERALD M. ROSEN AND LOREN PANKRATZ

Editor's note: Gerald Rosen and Gerald Davison coined the term purple hat therapy *as a metaphor for treatment packages such as eye movement desensitization and reprocessing (EMDR) that combine essential elements (cognitive and behavioral techniques) and nonessential elements (eye movements). Wikipedia now has a page dedicated to this concept.*

In the 1980s, several novel psychotherapeutic techniques were proposed for the rapid cure of post-traumatic stress disorder (PTSD). At the forefront of these "power therapies" was Eye Movement Desensitization and Reprocessing (EMDR), a method developed by Francine Shapiro (1948–2019) and still commonly used today. Shapiro reported a 100 percent success rate treating trauma memories with multi-saccadic eye movements, and she assured clinicians who read her report that they could use eye movements to "achieve complete desensitization of 75–80% of any individually treated trauma-related memory in a single 50-minute session" (Shapiro 1989, 221). Shapiro then offered workshops that introduced her treatment to thousands of clinicians. Over time, EMDR came to enjoy the sun of scientific endorsement.

We offer a less than sanguine view of EMDR, believing that Shapiro's claims and methods often took on the imprimatur of science without meeting the required demand of Carl Sagan (1996), namely that extraordinary claims require extraordinary evidence.

Questionable Origins

How a narrative begins influences what we subsequently come to understand, and thus we consider how EMDR first emerged. According to Shapiro, the therapeutic powers of rapid eye movements were discovered in May 1987, while she was walking in a park.

> The effect of saccadic eye movements was discovered accidentally by the author when she noticed that recurring, disturbing thoughts were suddenly disappearing and not returning. Careful self-examination ascertained that the apparent reason for this effect was that the eyes were automatically moving in a multi-saccadic manner while the disturbing thought was being held in consciousness. … The author then began to make systematic use of these movements to study the effect and later proceeded to generate the saccades in a large number of volunteers and clients. (Shapiro 1989, 201)

Shapiro's account is inherently suspect, because people are generally oblivious of eye movements, particularly saccadic movements. Any such awareness is almost exclusively limited to situations of voluntary intention to shift the eyes from one point to another (Brindley and Merton 1960). There also is a deeper problem if one stops to ask why Shapiro focused on eye movements in the first place; after all, feelings of calm can be evoked by walking in a park because of the fresh air, flowers, the benefits of outdoor exercise, and being away from the bustle of life. As it turns out, Shapiro already had a reason to be thinking about eye movements: prior to her now-famous walk, she was a devotee of neurolinguistic programming (NLP). In a 1985 interview (Bonasia 1985), Shapiro expressed the view that NLP was "the most powerful vehicle for personal and social change in existence." In an article, Shapiro (1985) advanced the idea that NLP's "super-achievers" technologies empowered people to tap into unlimited sources of personal power so they could, for example, walk across burning coals.[1] Shapiro's article also made clear that she understood the high importance that NLP theory placed on eye movement patterns:

> One of the findings of the Neuro-Linguistic Programming research is that all people cross-culturally (with the exception of the Basque nationality) show how they are thinking by the way their eyes move … Even without their saying a word, if you watch their eyes care-

1. For a science-based explanation on how embers of a fire do not efficiently transfer heat, see Pankratz 1988.

fully, you can determine whether they are seeing a picture, hearing, or feeling something. As a further refinement, you can tell if they are remembering something or constructing it.

Primed by her acceptance of NLP theory, Shapiro was ready to advance a belief in the therapeutic powers of eye movements. At the same time, she avoided acknowledging this influence, perhaps wanting to distance herself from those who viewed NLP as pseudoscience or perhaps hoping to obscure her intellectual indebtedness to others.[2]

Shapiro's Dissertation

Shapiro applied her claimed discovery of eye movement patterns to a doctoral dissertation that she completed in 1988. Here it is useful to provide more context to appreciate Shapiro's circumstances and her thoughts about science. From 1981 to 1988, she was enrolled at the Professional School of Psychological Studies, an unaccredited program in San Diego described as a diploma mill (Carroll 2004). During those seven years of working on her advanced degree, Shapiro launched New Age Health Services to sell wellness products, the Human Development Institute through which she offered NLP workshops, and MetaVox, whose lofty mission was to recruit the country's most powerful speakers. In her 1985 article, Shapiro promoted her NLP workshops, enthusiastically writing that "In NLP, the key is that since people share the same neurological system, responses are predictable, verifiable, and repeatable. In other words, Neuro-Linguistic Programming is scientifically rather than merely theoretically based."

Bonasia's 1985 newspaper article quoted Shapiro as claiming: "NLP is absolutely the most effective because of its wide range of applications." Shapiro conflated *theory* with *scientific evidence* and advanced the incorrect notion that the scope of problems to which a method is applied provides a measure of its effectiveness. In actuality, methods whose claimed cures have no boundaries have historically been associated with quackery instead of efficacy (see, e.g., Lawrence 1910; Walsh 1923).

As to the question of NLP being scientifically based, the National Academy of Sciences examined the potential value of these emerging claims. In their analysis, the Committee paid considerable attention to the fact that NLP had many enthusiastic supporters. They noted that people are highly influenced by testimonials of success, but following the scientific method is essential for winnowing the real from the illusory. After reviewing decades of human enhancement research and their own studies, they concluded that "there is little or no empirical evidence to date to support either NLP assumptions or NLP effectiveness" (Druckman and Swets 1988, 142).

In the context of her business enterprises and academic pursuits, Shapiro conducted a dissertation study in which twenty-two patients diagnosed with PTSD received the newly discovered eye movement procedure or a control condition while imagining a trauma related memory (Shapiro 1988). Change was measured with pre- and post- ratings of subjective stress. Shapiro reported that 100 percent of participants who engaged in eye movements were completely desensitized to the targeted trauma memory, whereas control subjects reported little improvement or increased stress. Shapiro's study was so poorly designed that one is left wondering if it would have qualified her for a PhD at an accredited university. One major flaw concerned allegiance effects, namely that innovators are biased to support their own work, which can influence outcomes. Shapiro's dissertation was exemplary in illustrating this intrusion. Entirely on her own, Shapiro conducted the assessment interviews, made the group assignments, administered the procedures (some of which were at her own residence), and quantified the pre- and post- subjective ratings. The control group in Shapiro's study checked all the boxes discussed by Cuijpers and Cristea (2016) in their article "How to Prove That Your Therapy Is Effective, Even When It Is Not: A Guideline." Participants in the treatment group engaged in sets of eye movements while imagining a trauma image, holding a positive cognition, and taking deep breaths. Participants in the control condition engaged in a frank discussion of the traumatic event absent any other treatment component or provision of support. Perhaps not surprisingly, six of the eleven control subjects experienced an increase in distress after recounting their traumatic experience.

Shapiro believed she had conducted a well-designed randomized controlled trial (RCT), and she submitted her study to the *Journal of Traumatic Stress*. The primary reviewer pointed out various flaws to the journal's editor, who repeatedly asked Shapiro for revision and the reviewer for reconsideration (Anonymous personal communications, January 19, 2021). Eventually, the reviewer "just gave up," and Shapiro's paper was published (Shapiro 1989), fatal flaws and all. In her discussion of her findings, Shapiro rejected the influence of experimenter bias based on "the sheer magnitude" of observed effects. An equally reasonable conclusion would be that the sheer magnitude of reported findings was the very proof of extraordinary *experimenter bias* and *demand effects*. This second explanation is particularly compelling considering a recent meta-analysis that questions if eye movements contribute anything to treatment outcome beyond allegiances and placebo (Cuijpers et al. 2020).

Shapiro's Responses to Negative Findings

A pattern emerged of Shapiro rejecting clinical and research findings as multiple publications failed to support her extraordinary claims of success. When several case failures were reported (Metter and Michelson 1993), Shapiro's response was to blame the clinicians for not having obtained required levels of training. She cautioned, "clients can be at risk if untrained clinicians attempt EMDR" (Shapiro 1993, 420) and revised her earlier assurances that clinicians could succeed merely by reading her 1989 article. Shapiro's stance was particularly amusing given that two of the failed cases reported by Metter and Michelson *involved her own demonstrations at a training seminar*.

A year later, Jensen (1994) found that EMDR was not effective in treating veterans diagnosed with PTSD, after which

2. For further analysis of this history, see Rosen 2023.

Shapiro criticized him for being half-trained. As explained by Shapiro (1996), Jensen had attended a Level I workshop but not Level II. Shapiro observed: "Such a lack of concern for standards of validity—both by the researcher and the published research reviewers—do a great disservice to the profession." When leveling this attack, Shapiro failed to take into account that at the time of Jensen's study, only one workshop was the standard: *there were no Levels I and II*. In fact, Shapiro had sent Jensen—and, we assume, other workshop participants—a congratulatory letter that thanked him for caring enough to take the specialized training. Here Shapiro had created an impossible situation for researchers: demanding treatment fidelity on the one hand while changing training requirements on the other (Rosen 1999).

Shapiro also changed procedures and theories, at times conveniently accommodating negative data. For example, Pitman et al. (1996) assessed the contribution of eye movements for the treatment of veterans with PTSD. Participants were assigned to standard EMDR or to an "eye-fixed" procedure that included finger tapping as a control for activity. Contrary to the central role Shapiro gave to eye movements, Pitman and his colleagues reported no significant between-group differences. At about the same time Pitman was collecting and analyzing his data, Shapiro (1994) began to propose that multiple forms of bilateral stimulation, rather than eye movements *per se*, accounted for EMDR's effectiveness. Thus, therapists could snap fingers, tap on a patient's knees, or employ bilateral audio stimuli, and they would still be practicing EMDR. In what represents a most curious twist of logic, Pitman et al. had simply compared EMDR to itself; eye movement desensitization and reprocessing no longer required eye movements!

Shapiro's Search for an Underlying Mechanism

Shapiro strived to find a science-based explanation that could lend credence to the notion that eye movements were an active ingredient contributing to treatment outcome. At first, she emphasized the notion of adaptive information processing and the "opening of an information processing 'block' caused by neural pathology" (Shapiro 1988, 130). After proposing alternative forms of bilateral stimulation, Shapiro advanced the idea of interhemispheric communication. In a stinging rebuke of these theories, Lohr (1996) declared that Shapiro was advancing "little more than jargon" and "an embarrassing form of cognitive-neuro-pseudo-science." As was the case with NLP, ill-conceived neuropsychological concepts did not assure scientifically sound theory.

A more recent attempt to explain the presumed therapeutic power of eye movements has focused on the hypothesis that dual tasks will tax working memory, thereby reducing the emotionality and vividness of imagery. While this explanation sounds science-based, the application of a working memory framework to EMDR rests on weak studies that have assessed nonclinical participants who focused on a single upsetting memory (e.g., Mertens et al. 2021). These analogue studies also yield inconsistent results. For example, Englehard et al. (2019) predicted that passive dual tasks that barely tax working memory (e.g., listening to beeps, finger tapping) should obtain fewer benefits than active tasks (e.g., eye movements). The authors cited publications in support of this prediction but ignored other studies that found no significant differences between eye movements and less taxing conditions (e.g., Merckelbach et al. 1994; Pitman et al. 1996). These findings are even more problematic when one considers that actual treatment studies with diagnosed patients have found that eyes-moving and eyes-fixed conditions yield comparable outcomes (e.g., Renfrey and Spates 1994; Sack et al. 2016). How can working memory possibly account for claimed EMDR treatment effects when equivalent outcomes are obtained with a nontaxing task?

Concluding Observations

Despite its controversial history, numerous studies supported EMDR, and it came to be recognized as an effective and evidence-based treatment (e.g., by the American Psychiatric Association and the International Society for Traumatic Stress Studies). These endorsements are viewed not as testament to the therapeutic powers of eye movements but as indicants of just how deficient current criteria are for defining what it means to be an evidence-based treatment. Here the core problem is that the profession of psychology remains vulnerable to anyone who claims a new method, trademarks an acronym, conducts the required number of studies—however weak their designs may be—and gains recognition for devising an accepted method. This scenario has become a reality as evidenced by an ever-expanding list of competing eye movement therapies, each with its own preferred pattern and claims of cure. In the spirit of perfecting how best to tax working memory, proponents of these methods have even gone so far as to shout "Whoosh!" after a set of eye movements. The antidote for this developing madness is a science-based framework in which the burden of proof falls on those who promote novel claims (Lilienfeld et al. 2018; Rosen et al. 2024).

EMDR appeared during a time when PTSD was a relatively new diagnosis, remission of post-traumatic symptoms

was difficult to achieve, and enormous resources were being spent on treatment (Shalev et al. 1996). These circumstances likely combined with Shapiro's strident efforts to promote eye movements as a rapid cure for PTSD. Looking at those efforts, it is almost as if Shapiro were applying the very NLP super-achiever technologies about which she had written back in 1985. Under the banner of a breakthrough discovery and pseudoscientific jargon, Shapiro packaged a nonessential novel technique (e.g., sets of bilateral stimulation) along with techniques that were already shown to be effective—exposure and imagery-based methods. Rosen and Davison (2003, 304–305) called this type of treatment package a "purple hat therapy."

> Hypothetically, a doctor could ask clients with driving phobias to wear a large purple hat while applying relaxation and cognitive coping skills to in vivo practice. The practitioner places a band of magnets in the purple hats, claiming that particular algorithms for positioning the magnets are determined by age, sex, and personality structure of the client. When properly placed, so the practitioner claims, the magnets reorient energy fields, accelerate information processing, improve interhemispheric coherence, and eliminate phobic avoidance. The inventor might call his method "purple hat therapy" (PHT) or "electro Magnetic Desensitization and Remobilization" (eMDR), conduct a single RCT against no treatment, and apply for listing as an [empirically supported treatment].

Shapiro's purple hat therapy had great success. She then directed the narrative: she pushed extraordinary claims, shifted her theories, taught ever more complicated methods, and insisted on treatment fidelity that required higher levels of training. Whatever accounts for EMDR's acceptance to this day, there is still no compelling reason nor science-based mechanism to justify therapists waving fingers in front of their patients' eyes. The extraordinary evidence just isn't there. ■

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Loren Pankratz, PhD, was a consultation psychologist at the Portland VA Medical Center and professor in the Department of Psychiatry at Oregon Health Sciences University. He maintained a forensic practice after retirement but now is focused on writing and collecting books on the history of deception. He is author of the book *Mysteries and Secrets Revealed: From Oracles at Delphi to Spiritualism in America* and is a CSI fellow.

FUN & GAMES

Edited by Stephen Hupp

YOU CAN FIND THE ANSWERS TO THESE GAMES IN SECRETS REVEALED (P. 65).

1	2	3	4
2			
3			
4			

Find 3 groups of 3 connections...

SNACKS	MACHINE	FUN-HOUSE
YOU!	DOO	DOOBY
ARE	WHERE	INC.

CONNECTIVITY

These words can be divided into 3 groups, each with 3 words. Your brain is great at finding patterns—sometimes this helps, but other times it hurts! Write your guesses here:

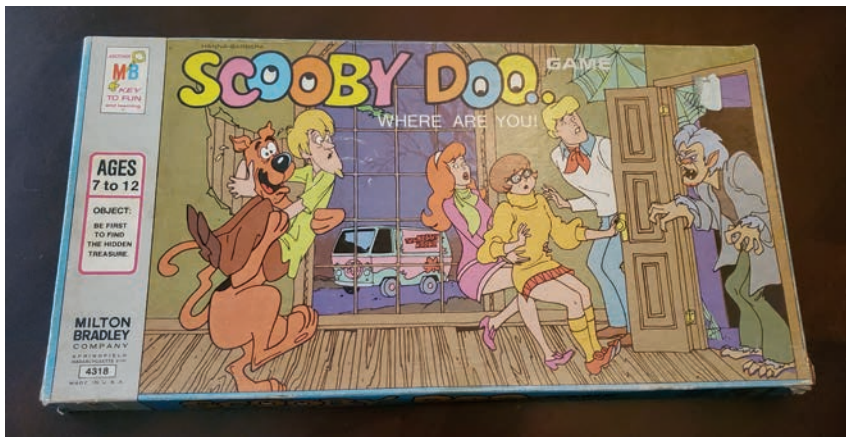
SKEPTICROSS

ACROSS

1. The Mystery House was cutting ____.
2. Mystery House feature that leads to nothing.
3. Other places that also claim hauntings.
4. Possible sound from the Mystery House organ.

DOWN

1. Improvement to Wikipedia's Mystery House page (thanks GSoW!)
2. The first rule of editing Wikipedia is: ____harm!
3. On some Mystery House staircases, you can ____ further.
4. Winchester is the ____while owner of the Mystery House.



ANTIQUE MALLARKEY

By Daniel A. Reed

Many hours of my youth were fondly spent playing the Scooby Doo ... Where Are You! game. Released by Milton Bradley in 1973, the game is based on the Hanna-Barbera cartoon, which premiered in 1969. Players follow along a set route in a haunted castle, starting out near the Mystery Machine and Scooby-Doo. "Playing as one of his friends, you must watch out for the trap doors and musty cellars as you search for hidden treasure." Competitors spin an arrow to determine how many spaces they move. Landing on a spot marked "X" leads to a secret passage in which players draw a card with instructions that may help or hurt. During the game, players must avoid various snares such as being sent back to the beginning or falling into a torture room. Ultimately, "the first one to find the booty wins the game."

Hidden Message Search

All these letters combine to make a hidden message with each letter being used once. To find the message, connect the letters by going right, left, up, down, or diagonal (even within the same word).

M B P A G
U R E N E
N M G I T
N I S S H
E E T R I

Silly Sorting

This list includes some songs by Taylor Swift and some works by Stephen King. Can you tell the difference? Circle your guesses below.

BAD BLOOD

BEAUTIFUL GHOSTS

DREAMCATCHER

FAIRY TALE

HAUNTED

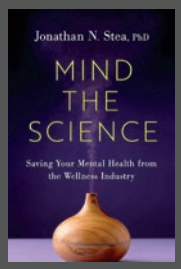
THE OUTSIDE

Stephen King Image Credit: Maria_Domnikova| Shutterstock
Taylor Swift Image Credit: Joci Sampaio| Shutterstock

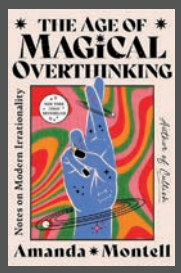
[NEW AND NOTABLE BOOKS

Edited by Stephen Hupp. Listing does not preclude future review.

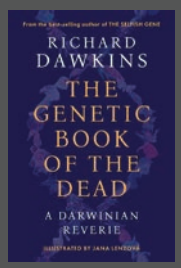
BIZARRE MEDICAL IDEAS … and the Strange Men Who Invented Them. CSI Fellow and emeritus professor of complementary medicine Edzard Ernst wrote this new book that "focuses on the individuals who invented specific forms of alternative medicine. Examples are Hahnemann (homeopathy), Still (osteopathy), Schulz (autogenic training)." Springer, 2024.



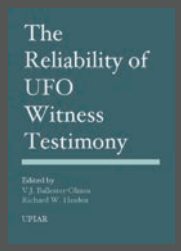
MIND THE SCIENCE: Saving Your Mental Health from the Wellness Industry. This book by clinical psychologist Jonathan N. Stea "provides a takedown of mental health misinformation and pseudoscience to educate and embolden readers who wish to make informed decisions about their mental health." Oxford University Press, 2024.



THE AGE OF MAGICAL OVERTHINKING: Notes on Modern Irrationality. In this book, linguist Amanda Montell "argues that in the modern information age, our brain's coping mechanisms have been overloaded, and our irrationality turned up to an eleven." More from this author can be heard on her podcast *Sounds Like a Cult*. Atria/One Signal Publishers, 2024.



THE GENETIC BOOK OF THE DEAD: A Darwinian Reverie. CSI Fellow and founder of CFI's Richard Dawkins Foundation for Reason & Science, Richard Dawkins "shows how the body, behavior, and genes of every living creature can be read as a book—an archive of the worlds of its ancestors." To find out how to see Dawkins talk about this book live, visit richarddawkins.com. Yale University Press, 2024.



THE RELIABILITY OF UFO WITNESS TESTIMONY. In a comprehensive edited work, V.J. Ballester-Olmos and Richard W. Heiden present fifty-seven chapters on the reporting of encounters with UFOs. In praise of the book, Elizabeth Loftus said, "Readers will be enthralled by the fascinating case histories." UPIAR, 2023.

Myths, Monsters, and Mysteries of Those Meddling Kids

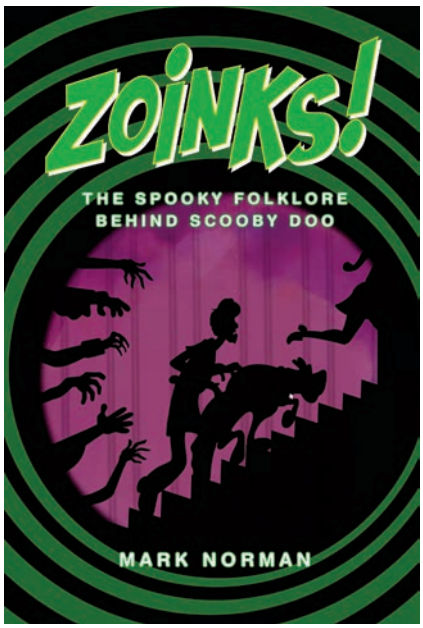
Benjamin Radford

Zoinks! is the first book to examine the folklore, myths, and legends about Scooby-Doo that inspired so many of the Mystery, Inc., gang's adventures. Approaching the beloved cartoon with scholarly rigor and more than a bit of wit, Mark Norman (host of the *Folklore Podcast* and author of several books, including *Black Dog Folklore* and *Telling the Bees and Other Customs: The Folklore of Rural Crafts*) unmasks the myriad ways that the *Scooby Doo* franchise fits into our historical, pop culture, and folkloric worlds.

Norman traces the origins and influence of the series—in its myriad incarnations, some inevitably more successful than others—in some unexpected places. In the wake of the 1968 assassination of Robert F. Kennedy, the country was in the grip of a moral panic about the perils of cartoon violence. William Hanna and Joseph Barbera were among those who heeded a network call for new programming, spawning countless classic cartoons—among them *Scooby-Doo*.

Norman notes that "from a folklorist's angle, we might see Mystery Incorporated as archetypal characters," from the bland leader Fred to the nerdy Velma, shapely Daphne, beatnik Norville Rogers (a.k.a. Shaggy), and of course the perpetually befuddled Scooby himself. Norman tracks down many legends and stories about the series, ranging from the nature of Scooby Snacks to Velma's sexuality. Norman also dives into the main themes and aesthetics:

> In the classic early designs of *Scooby-Doo* death is always on the periphery. Sometimes, that is in an obvious way with an animated corpse or a haunting, but it might also be in more subtle ways too. Buildings are usually run-down, even in towns. Woodwork is rotting. And as with the Gothic generally, and a lot of folklore in particular, the haunted landscape has the feel of death about it too. Trees are often twisted and bare. Dead leaves blow along the ground. Even in episodes that are set outside of the usual American backdrop you get the same feel.



Zoinks! The Spooky Folklore behind Scooby-Doo. By Mark Norman. Chinbeard Books, 2024.

Ghosts—headed and otherwise—are a staple of the series, and Norman delves into the different types of ghosts that appear, their forms and functions, both narratively and culturally. There are plenty of phantoms but also curses, séances, haunted mirrors, Greek myths, repressed memories, Jackalopes, aliens, witches, Abominable Snowmen, screaming skulls, and, yes, even a chupacabra.

It's no wonder that skeptics are among the more ardent fans of the series, and Norman examines critical thinking and skepticism in the show. Norman quotes an executive producer of a series who attributes the popularity and longevity of the show in part to its humanist and skeptical lessons: "At the end of each episode the supernatural villain turns out to be fake. That is very reassuring to kids, and their parents. In my opinion the versions of the show that hold to this work the best." As a young viewer, it certainly left an impression on me; along with the *Encyclopedia Brown* series of books about a boy detective, the cartoon demonstrated that with diligent research and investigation, mysteries were indeed solvable. This lesson stood in stark contrast to the plethora of mystery-mongering shows, books (looking at you, Time-Life), and magazines of the era that framed the Bermuda Triangle, Bigfoot, and other such mysteries as inherently unsolvable—things that "science couldn't explain," to quote the common trite and lazy promotional copy. Sure, the shows were formulaic and corny. Sure, the guest stars seemed more like gimmicks than helpful assistant investigators. (I met the Harlem Globetrotters as a kid, and though friendly they seemed singularly uninterested in helping me look for ghosts.) But they were fun and funny, and even if you could guess the villain right away, you still eagerly anticipated the obligatory unmasking.

Even non-fans of the series (if there are any) will enjoy this folkloric tour of this classic cartoon. The book ends with an exhaustive appendix listing nearly every episode in the *Scooby Doo* canon. Whether you consider it diligent research or an unhealthy obsession—or a bit of both—Norman has certainly put in the time and effort to bring some scholarly and critical analysis to the franchise. Grab a Scooby Snack and dig in! ■

Benjamin Radford is the deputy editor of Skeptical Inquirer.

Science Stories Shaping Our World

Katie Suleta

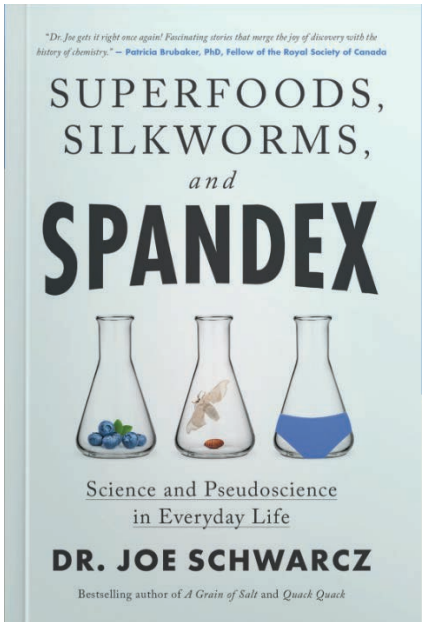
The essence of what a science communicator does is try to make science relatable and accessible to the masses. Joe Schwarcz has been doing this for decades. His latest book, *Superfoods, Silkworms, and Spandex: Science and Pseudoscience in Everyday Life*, continues his legacy of making science both accessible and fun. It's a veritable buffet of anecdotes, stories, and tidbits of information begging to be shared with anyone and everyone.

In typical Schwarcz fashion, this book is a compilation of stories about how we came to understand more about our world. He's a chemist by training, so explaining the behind-the-scenes chemical reactions that create some of the most common substances in our lives is a large theme throughout the book.

As someone with little knowledge of chemistry myself, I appreciated that he explained enough to make it understandable, though I admittedly still felt a bit lost about some of the nuances. I never felt like any core topic was incomprehensible, because he provides the reader with the requisite knowledge for the stories up front.

Schwarcz has a way of distilling concepts into the component stories, allowing readers to see the way science comes together for breakthroughs. His stories nicely illustrate that progress is rarely in leaps and bounds but rather the work of many, building upon the work of many more. These are the kinds of stories that can be told when someone aggressively charges, "What's the use of studying how crickets jump?!" or "Do we actually need to understand what leads to aggression in bees?"

True to form as an educator and science communicator, this compilation of stories seems tailored to be easily used in the classroom, a conversation, or even a congressional hearing supporting the funding of scientific research. Why is scientific research important to our lives? Look no further than the story titled "Nylon Pros and Cons" for justification of basic scientific research and how it can fundamentally change the world.


"Dr. Joe gets it right once again! Fascinating stories that merge the joy of discovery with the history of chemistry." – Patricia Brubaker, PhD, Fellow of the Royal Society of Canada
SUPERFOODS, SILKWORMS, and SPANDEX
Science and Pseudoscience in Everyday Life
DR. JOE SCHWARCZ
Bestselling author of A Grain of Salt and Quack Quack

Superfoods, Silkworms, and Spandex: Science and Pseudoscience in Everyday Life. By Joe Schwarcz. ECW Press, 2024.

Many, if not most, of the stories will leave you wanting more. I wanted even more on superfoods and the prefix *bio* and how marketing has relegated these concepts to the lizard part of our brains: "Superfoods good. *Bio-anything* good." But the book's role is to introduce you to concepts and inspire your own curiosity to learn more. Inspiring curiosity is the first step to creating more scientists, developing more science communicators, improving science literacy, and having more people invested in science.

Some other fun stories include:

- The history of fiberglass reveals how such a seemingly small discovery can have big consequences.
- The discovery of nickel demonstrates that scientists can have professional success while also providing kindness to the world.
- The stories about aconite and head transplants were deadly fascinating and would be perfect for a science lesson around Halloween.
- The story on California Proposition 65 provides an answer to the question, "Why does everything seem to be linked with cancer in California?"
- The basic research into different metals leads to advancements in dental and orthopedic surgeries that have improved and expanded countless lives.

As with any book, not every story is a slam dunk. Some stories wandered a bit. For me, these included "Those Forever Chemicals" and "Silkworm Poo." But there are far many more hits than misses—and even the misses inspired me to want to know more about the topics. Schwarcz has a knack for identifying those items and substances in plain sight that we take for granted. He inspires us to stop and ask, "How did that come to be?"

Humans relate to and communicate through stories. It's something that scientists often forget in our world of jargon, precision, and dry language. This book is a lovely defense of science; if more scientists prioritized science communication and curiosity inspiration, like Schwarcz with this book, we might live in a different world. One can hope. ■

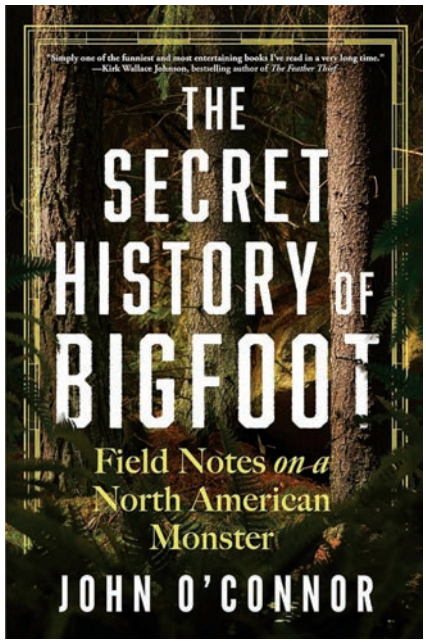
Katie Suleta is a trained epidemiologist and informaticist. She currently works as a regional director of research in graduate medical education for HCA Healthcare. She has a doctorate of health sciences in clinical practice and education as well as master's degrees in public health and health informatics. She also writes for the American Council on Science and Health.

Bigfoot and the Folk

Brian Regal

Musicologist Alan Lomax (1915–2002) spent his professional career traveling around the country making audio recordings of obscure American musicians, mostly poor and rural, playing obscure American music. He believed such folklore was an aspect of the American experience worth preserving and studying. He argued such music was crucial to understanding American history. It didn't matter if you don't like blues or folk music; it is important. There are numerous communities and subcommunities engaged in various pursuits away from the mainstream in America that, even if you don't like them (or think they're nonsense), are still worth preserving.

In his new book *The Secret History of Bigfoot: Field Notes on a North American Monster*, journalist and author John O'Connor has turned his attention to the world of Bigfoot believers and pursuers. As the title suggests, O'Connor tells the story as his journey rather than a history. He travels around and speaks with Bigfooters, both known and obscure, to enter and understand their quirky paradoxical world and why they think the creature is real. He interviews monster enthusiasts, letting them tell their own stories and relate their own experiences pursuing—and even encountering—the hairy creature said to inhabit the forests and secret places of North America (as well as their imaginations and dreams). He treats them and their stories with respect and humor but not ridicule. (As someone who has also written about anomalous primate enthusiasts, I know it can be tempting to treat them like fish in a bucket.) He sweeps from the Bayou to the great pine forests and everywhere in between. Some of his interviewees have never seen a Bigfoot footprint, let alone the creature itself; others claim they see them in their backyards regularly.


"Simply one of the funniest and most entertaining books I've read in a very long time."
—Kirk Wallace Johnson, bestselling author of *The Feather Thief*
THE SECRET HISTORY OF BIGFOOT
Field Notes on a North American Monster
JOHN O'CONNOR

The Secret History of Bigfoot: Field Notes on a North American Monster. By John O'Connor. Sourcebooks, 2024.

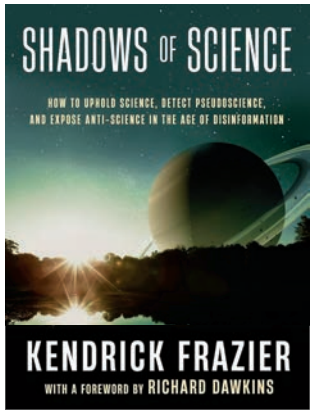
Cryptozoology is not the study of unknown animals but rather the study of people chasing something that is not there—such as UFOs or ghosts. This condition, however, does not deter the chasers. This, I think, is because Bigfoot is not the reason for their often-lifelong quests; instead, it's the excuse for them. The thing they are after is not a big hairy (and presumably stinky) anomalous primate. It's much more personal. They search for themselves. This is not new to the American experience. When Henry David Thoreau, for example, went off "to live deliberately" at Walden Pond, he wasn't looking for the secrets of nature so much as he was looking for the secrets of Henry David Thoreau. Like Thoreau, this is what the Bigfooters do in the wilds of America. The world of Bigfootery is a decidedly rural, not urban, world. It allows enthusiasts

to walk sunny bucolic idyls contemplating nature far from the perceived hellscapes of urban life. The hunt can be inducive to thoughtful self-reflection. It's also just fun: You put on your outdoor couture, grab infrared night vision goggles, and stalk the elusive prey. You can marvel at the landscape and fill your lungs with pure, clean, pine-scented fresh air, accompanied by nothing other than your hunting friends and the gentle, soothing twittering of the birds (oh, and hopefully an occasional primate-like roar in the distance). If they ever really encounter the creature, which is unlikely, when they stare into its eyes, they will not see infinity; they will see their own reflection. If so, then they can call their search a success.

In the end, the story of Bigfoot enthusiasts and their adventures is a story worth preserving. John O'Connor's excellent and well-written book does just that and is well worth reading. Maybe even Alan Lomax would have admired it. ■

Brian Regal is professor of the history of science, technology, and medicine at Kean University. He is the author of *Searching for Sasquatch: Crackpots, Eggheads, and Cryptozoology* (2011) and the recent *The Battle over America's Origin Story* (2021).

Skeptical Inquirer
THE MAGAZINE FOR SCIENCE AND REASON
Threats to Science • Why Weird Stuff Matters
STORIES THAT SHOULD BE HANDLED WITH CARE


SHADOWS OF SCIENCE
HOW TO UPHOLD SCIENCE, DETECT PSEUDOSCIENCE, AND EXPOSE ANTI-SCIENCE IN THE AGE OF DISINFORMATION
KENDRICK FRAZIER
WITH A FOREWORD BY RICHARD DAWKINS

Shadows of Science

Including Kendrick Frazier's article "Stories That Should Be Handled with Care: The Subjects of Pseudoscience" in the March/April 2024 issue of Skeptical Inquirer is much appreciated. The article offers a wonderful taste from a skeptical thinker who dedicated his work to upholding scientific beliefs, which were beautifully brought to fruition in his new book *Shadows of Science*.

Please allow me to share my enthusiasm for this recently released publication. For those familiar with Frazier's decades of valuable contributions as editor of SI, *Shadows of Science* offers a much appreciated review of the origin and evolution of the magazine as well as reminding readers of the important values blossoming through decades of intriguing, if not challenging, discussions found within the publication. For those less familiar with the publication, *Shadows of Science* provides a stimulating introduction to skepticism.

On a personal note, my wife, Norma, and Frazier's wife, Ruth, are lifelong friends. For many years, we have had the good fortune of a special friendship with Ken and Ruth sharing joyous and fascinating times together. What is amazing to me is that Frazier's book reads and feels as if we are engaged in conversation, and I believe his writing will offer the same personal experience to those who have known him over the years. His wisdom, values, and gentle thoughtfulness speak to us throughout *Shadows of Science*. While there are many examples of this, a favorite for me is found in the conclusion of chapter 11, "Skepticism Goes Global."

> We are ultimately defending a variety of liberties essential to enlightened societies and functional democracies: freedom of inquiry and expression at all levels; science as the most reliable guide to truth about the natural world; a love of learning and questioning; respect for human rights and dignity; the right to learn, to study, and to investigate unfettered by any authoritarian interference; free and open and civil discussion of all issues; and the idea that hard-won new knowledge—while it always raises new issues and problems—is essential for continuing human progress.

These values expressed by Frazier remind us of the importance and need for such values to be not only honored today but into the future as well.

It is with great admiration of Kendrick Frazier's body of work throughout his life that I recommend his most recent and impressive effort, *Shadows of Science*, to your readers.

Allan Lammers
Sacramento, California

Correction about Kepler's Proof

In Stuart Vyse's "Rhinos and Radium: A Skeptic's Tour of Paris, Part II" (March/April 2024), he says "Johannes Kepler's (1571–1630) proposal that the grocer's method of stacking oranges in a pyramid produced the least possible space between oranges" problem was proved in 1958, but it should be 1998.

Jan Willem Nienhuys
Waalre, The Netherlands

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BRIGHT SIDE OF THE
ARTIFICIAL INTELLIGENCE APOCALYPSE
GUY P. HARRISON
Conspiracies, Folklore, & AI
Practical AI for Skeptics
Alternative Therapies for Menstrual Pain
Witchcraft-Based Violence
White Paper from the Congressional Freethought Caucus

Artificial Intelligence

I enjoyed the artificial intelligence (AI) issue of SI (May/June 2024). AI is certainly the buzzword *du jour*. To dampen the AI hype from both directions, I find it helpful to call AI what it really is: a computer program. That allows AI to be framed in its proper context. An axiom from that arena springs instantly to mind: GIGO (garbage in, garbage out). I've seen similar wild claims and unhealthy fears about computer programs since the 1950s. Nothing has come of it … or am I really in the Matrix now?

Dave Suess
Redondo Beach, California

Correction on ChatGPT

Thanks to Mick West for his article about AI ("Practical AI for Skeptics," May/June 2024). However, his robot overlords would like it known that the letters GPT in ChatGPT do not stand for "Generative Predictive Text" as he wrote but for "Generative Pre-trained Transformer."

Martin Stubbs
London, United Kingdom

Mick West responds:

Martin Stubbs is correct. GPT has historically stood for "Generative Predictive Text," and that's essentially what ChatGPT does. However, it seems that early on, OpenAI referred to GPT as first "Generative Pre-Trained" and then "Generative Pre-trained Transformer." My mistake was in assuming the more old-fashioned usage—a downside of being old.

Weird Coincidences

I just received my first issue of SI and have found it very informative and stimulating. Regarding "Weird Shit Explained" (May/June 2024), it brought to mind two recollections that I have always considered examples of coincidence on the one hand and divine intervention on the other. As a college student, I was known as Kooter. Seventeen years after graduation, I was standing at the Trevi Fountain in Rome, Italy, when I heard someone in the distance shout "Kooter!" I have deemed this unlikely but not extremely rare convergence of acquaintances in a distant land as a "coincidence."

But what happened to a friend of mine while touring Ireland was far beyond coincidence. Chris and his two buddies stopped at a pub in Cork County that was packed with about eighty patrons. My friend noticed three unaccompanied ladies at a table and decided to strike up a conversation. One of the ladies detected Chris's American accent and asked where in America he was from. He told her Philadelphia (instead of Drexel Hill), surmising it would be unknown to her. He was floored when she replied that she had just returned from a suburb of Philadelphia—Drexel Hill. When he asked where in Drexel Hill she had been, she advised that she was on Garrett Road, which was the

same street that Chris's mother lived on. She further stated that she had visited her cousin Tom Shea there. "Tom Shea! Tom Shea!" Chris shouted. "I graduated high school with Tom Shea!"

In a country of five million people, thirty-two counties, and over 6,000 pubs, Chris somehow managed to zero in on the one person who was related to a former classmate who lived on the same street as his mother. Now that is some weird shit that is extremely hard to explain!

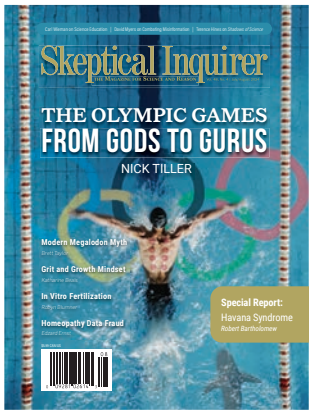
Bill Domenico
Hammonton, New Jersey

Chris French responds:

While I quite understand why Bill Domenico would be blown away by what happened to his friend, I am afraid that I don't think it is "extremely hard to explain." I have a whole chapter in my book The Science of Weird Shit *devoted to the psychology and mathematics of coincidence. For readers who would like to take an even deeper dive into the mathematics of coincidence, I would highly recommend David Hand's wonderful book* The Improbability Principle. *The subtitle of Hand's book says it all:* Why Coincidences, Miracles and Rare Events Happen Every Day.

Many such amazing coincidences are to be expected simply based on what mathematicians call the Law of Truly Large Numbers. Given enough opportunities for even rare coincidences to occur, it is almost inevitable that some will. After all, we are not surprised when people win the jackpot in national lotteries even though the chances of any one individual winning are astronomically low. Indeed, we should not be surprised—but typically we are—to hear of double jackpot winners. It can and does happen. It must feel like a miracle to the lucky winner. It isn't; it's simply the laws of probability.

No Letters in the Last Issue?



I have been a subscriber to Skeptical Inquirer since it was a compact quarterly back in the 1980s. The July/August 2024 issue is the first one I can recall without the extensive letters section. Instead of the letters section, there was a "Games" section. There was no indication as to why there were no letters in this issue. I have always found the letters to be very informative and interesting. Several of mine have been published over the years. Is this the new policy?

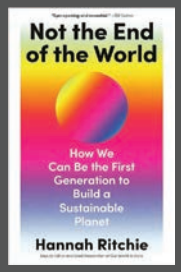
Dennis Middlebrooks
Brooklyn, NY

Editor Stephen Hupp responds:

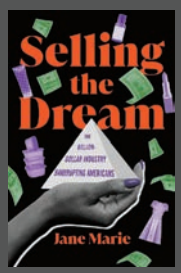
I hope you are reassured to see the Letters to the Editor section return. We'll continue to keep this section in future issues. Some issues elicit a lot of letters and others elicit fewer. For that particular issue, we had a low number of letters and a lot of other material to be published, so I chose to leave that section out and move those letters to this issue instead. It's good to know that you value this section, and I'm sure you speak for a lot of people. For anyone writing a letter, it is more likely to be published if brief and when written in a constructive tone even when critical of the magazine (just like these letters). Also, we're still accepting letters for the last issue—this letter arrived just early enough for us to squeeze it in here. Lastly, thank you for subscribing for so long and for sending in letters. It's readers like you that have kept the magazine going for nearly fifty years!

[NEW AND NOTABLE BOOKS

Continued from page XX. Listing does not preclude future review.



NOT THE END OF THE WORLD: How We Can Be the First Generation to Build a Sustainable Planet. Offering an optimistic view of sustainability, data scientist Hannah Ritchie shares "what works, what doesn't, and what we urgently need to focus on so we can leave a sustainable planet for future generations." Little, Brown Spark, 2024.



SELLING THE DREAM: The Billion-Dollar Industry Bankrupting Americans. Emmy Award–winning journalist Jane Marie exposes how multilevel marketing companies "prey on desperate Americans struggling to make ends meet." The book builds on the author's podcast, *The Dream*. Atria Books, 2024.

Skeptical Inquirer Presents

For more, watch Joe Schwarcz's *Skeptical Inquirer Presents* video about his book *Superfoods, Silkworms, and Spandex*

(scan the QR code to visit skepticalinquirer.org)

SECRETS REVEALED

DID YOU SEE THE SECRETS ON THE COVER?

Connectivity **Answer**

Group #1: The words FUNHOUSE, MACHINE, and INC. all commonly appear after the word *mystery* in the Scooby Doo franchise (i.e., mystery funhouse, Mystery Machine, and Mystery Inc.).

Group #2: The words SNACKS, DOO, and DOOBY all commonly appear after the word *Scooby* (i.e., Scooby Snacks, Scooby Doo, and Scooby Dooby Doo).

Group #3: The words WHERE, ARE, and YOU! make up the rest of the title after the phrase "Scooby-Doo" in the original series (i.e., Scooby-Doo, Where Are You!).

Skepticross **Answer**

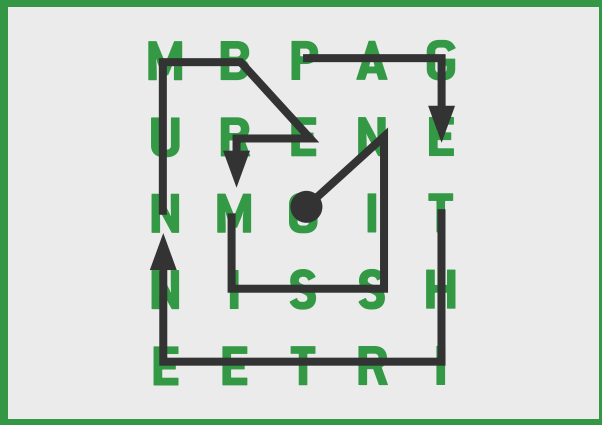
1 E	2 D	3 G	4 E
2 D	O	O	R
3 I	N	N	S
4 T	O	O	T

Silly Sorting **Answer**

1. Swift wrote *Bad Blood.* King wrote *Blood and Smoke.*
2. Swift wrote *Beautiful Ghosts.* King wrote *Michael Jackson's Ghosts.*
3. King wrote *Dreamcatcher.* Swift wrote *Wildest Dreams.*
4. King wrote *Fairy Tale.* Swift wrote *Today was a Fairytale.*
5. Swift wrote *Haunted.* King wrote *Rose Red**
6. Swift wrote *The Outside.* King wrote *The Outsider.*

Peek Inside the *Scooby Doo ... Where Are You!* Game

Hidden Message Search **Answer**



**This was inspired, in part, by the Winchester Mystery House.*

CONTINUED FROM PREVIOUS PAGE

A Few Words on the Devil's Triangle Cipher

QRPQFDWXGHMNSTTU GHTUTUSTFDTU
PQFDWXFDBCJK NOZ!TUUSFDPQGHFDTU

USGHNOFD XVBCPQQRTU FDVWQRJKMNPQGHOMHI
MNSTPQ DEPQGHOMHIFD IGGHTUUSMNPQGHFDTU

USMN DEGHOMEF TUMNNOFD OMFDXV ABJKSTFDTU
JKMNMNLJ CABCABLJ MNOMJKZ! MNOMFD

Z!MNSTPQFD GHOM USIGFD PQGHHIIGUS TUQRMNUS
GHDE Z!MNSTPQFD IGBCWXGHOMHI DESTOM

NOGHBCNOGH TUBCOM KLSTBCOM
BCOMEF MNOMFD MNUSIGFDPQ QRJKBCABFD

USIGBCUSTU XVIGFDPQFD USMN WXGHTUGHUS
DEMNPQ TUMNJKWXGHOMHI USIGGHTU ABBCTUFD

USIGGHTU USPQGHJKMNHIZ!TU USIGGHPQEF
GHTU IGBCPQEFFDTUUS USMN TUFDFD

CASTUS TUMNJKWXGHOMHI KLSTTUUS MNOMFD
TUQRGHJKJKTU BCJKJK MNDE USIGFD USFDBC

BCOMEF XVIGFDOM Z!MNSTPQ EFFDFDQR EFGHWXFD
TUFDFDNOTU BCUS BCOM GHNOQRBCTUTUFD

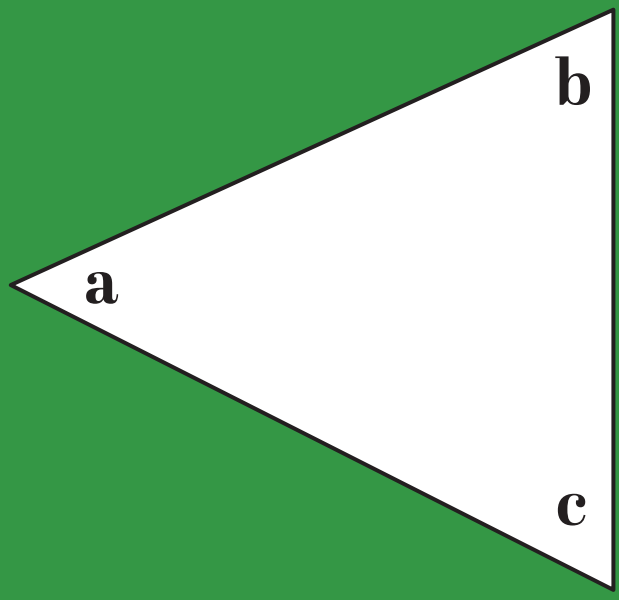
USIGBCUSTU XVIGFDOM USMN USBCLJFD MNSTUS
EFFDUSFDABUSGHWXFDTU PQMNSTOMEF HIJKBCTUTU

USIGFD DEGHWXFD EFGHHIGHUS ABMNEFFD
HIFDUSTU Z!MNST OMFDBCPQJKZ! USIGFDPQFD

GHUSTU NOFDBCOMGHOMHI BCTU XVFDJKJK
Z!MNSTJKJK OMFDFDEF USMN USIGFDOM TUIGBCPQFD

USIGFD JKBCTUUS ABMNWXFDPQ IGGHEFFDTU
BC ABJKSTFD MNOM USIGFD CABCABLJ

Z!MNST TUMNJKWXFDEF USIGGHTU ABGHQRIGFDPQ
Z!MNSTPQFD MNOM USIGFD PQGHHIIGUS USPQBCABLJYZ



Six Issue Sequence

Each of the most recent six issues of SKEPTICAL INQUIRER contain clues to multiple hidden five-digit codes. To date, no codes have been discovered and no prizes have been claimed. For more, read "Summer Shenanigans" in the previous issue (Vol. 48, No.4).

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Skepticism and Pseudoexperiments Creationists Continue Assault on Science
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UFO Identification Process
Why Humanoid Aliens?
Might Aliens Be Worms?
Skeptical Inquirer
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